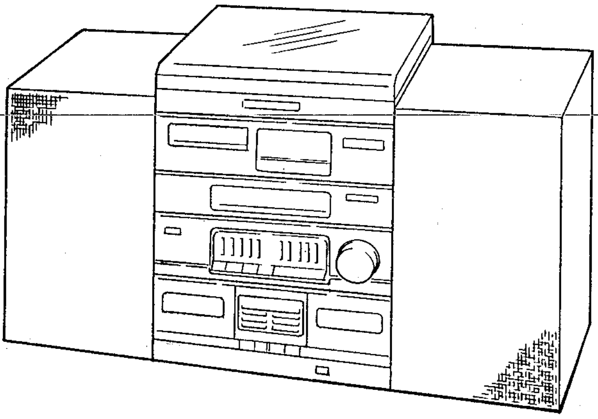
XO-D301/D301CD/ D501CD/D501CDM

SERVICE MANUAL

AEP Model
XO-D301

UK Model
XO-D301
~~*XO-D301CD*~~
XO-D501CD
XO-D501CDM



- XO-D301/D301CD/D501CD/D501CDM is composed of following models.
  As for the service manual it is issued for each component model, than, please refer to it.

COMPONENT MODEL NAME FOR XO-D301/D301CD/D501CD/D501CDM

	XO-D301	XO-D301CD	XO-D501CD	XO-D501CDM
Stereo deck receiver	HST-D301	HST-D301CD	HST-D501CD	HST-D501CDM
Turntable System	PS-LX40P			
Speaker System	SS-A301		SS-A701	
CD Player		CDP-M26		CDP-C500M

SPECIFICATIONS

Power requirements	AEP model: 220V AC, 50/60Hz UK model: 240V AC, 50/60Hz
Power consumption	XO-D301/D301CD AEP model: 85W UK model: 170W XO-D501CD/D501CDM: 250W
Weight	XO-D301/D301CD: Approx. 7.5kg XO-D501CD/D501CDM: Approx. 8.5kg
Dimensions (w/h/d)	Approx. 355× 290× 350 mm incl. projections

PARTS LIST

ACCESSORY & PACKING MATERIAL

1-501-374-11	ANTENNA, LOOP (MW)
1-501-369-11	(D301:AEP)...ANTENNA (FM)
1-465-148-11	REMOTE COMMANDER (RM-S420)
1-465-186-11	(D501CDM)...REMOTE COMMANDER (CDP-C500M)
2-394-123-01	COVER, BATTERY
4-384-285-01	(D501CDM)...COVER, BATTERY (CDP-C500M)
1-558-032-11	(D301CD,D501CD)...CORD, POWER
1-558-543-11	(D301CD,D501CD)...CORD, CONNECTION
1-559-533-11	(D501CDM)...CORD, CONNECTION
3-701-806-00	ADAPTOR, 45 (E)
3-786-926-52	(EXCEPT D301:AEP)...MANUAL, INSTRUCTION
3-786-926-11	(D301:AEP).........MANUAL, INSTRUCTION
3-786-926-42	(D301:AEP).........MANUAL, INSTRUCTION
3-750-381-11	(D501CDM)...MANUAL, INSTRUCTION(CDP-C500M)
4-914-075-01	CUSHION (SP)
4-918-640-01	(D301CD,D501CD)...FASTENER, SIDE PLATE
4-918-644-01	(D301CD,D501CD)...PLATE, SIDE
*4-929-901-01	(D301CD).....INDIVIDUAL CARTON
*4-929-902-01	(D301:UK)....INDIVIDUAL CARTON
*4-929-903-01	(D301:AEP)...INDIVIDUAL CARTON
*4-929-996-01	(D501CD).....INDIVIDUAL CARTON
*4-930-742-01	(D501CDM)....INDIVIDUAL CARTON
7-685-647-79	(D301CD,D501CD)...SCREW +BVTP 3X10 TYPE 2 N-S

- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

COMPACT HI-FI STEREO SYSTEM

SONY®

MICROFILM

9-953-762-11

Sony Corporation
Audio Group

English
88D0646-1
Printed in Japan

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Published by A/V Engineering Service Dept.

HST-D301/D301CD/D501/ D501CD/D501CDM

SERVICE MANUAL

AEP Model
HST-D301
HST-D501

UK Model
HST-D301
HST-D301CD
HST-D501CD
HST-D501CDM

- The HST-D301 is stereo deck receiver section in the XO-D301/D301CD and the HST-D501, in the XO-D501CD/D501CDM.

- In this SERVICE MANUAL HST-D301 stands for HST-D301/D301CD, and HST-D501 for HST-D501/D501CD/D501CDM.

Model Name Using Similar Mechansim	D301 DECK A/DECK B: TC-W7ES D501 DECK A/DECK B: DXA-D50
Tape Transport Mechanism Type	D301 DECK A: TCM-170VA1 DECK B: TCM-170VB3 D501 DECK A: TCM-170RA1 DECK B: TCM-170RB1

SPECIFICATIONS

Stereo deck receiver

System	FM stereo, FM/AM superheterodyne tuner

FM tuner section

Tuning range	87.5 to 108 MHz
Antenna terminals	75 ohms unbalanced 300 ohms balanced (UK model)

MW/LW tuner section

	MW	LW
Tuning range	531 to 1,602 kHz	153 to 281 kHz
Antenna	AM Loop antenna, External antenna terminal	
Intermediate frequency	450 kHz	

Amplifier section

Continuous RMS power output
HST-D301:
30W + 30W (6 ohms, at 1 kHz, 5% THD)
HST-D501:
50W + 50W (6 ohms, at 1 kHz, 5% THD)

Inputs

Jacks	Jack type	Sensitivity	Impedance
CD IN	Phono	200 mV	47 kohms
PHONO IN	Phono	5.5 mV	50 kohms

Frequency response CD: 15 Hz to 50 kHz $^{+0}_{-3}$ dB

Cassette deck section

Recording system	4-track 2-channel stereo
Frequency response	DOLBY NR OFF With TYPE II cassette (Sony UX-S) 40 Hz to 14 kHz (±3 dB) With TYPE I cassette (Sony HF-S) 40 Hz to 13 kHz (±3 dB)
Wow and flutter	±0.2% (DIN)

General

Power requirements	AEP model: 220V AC 50Hz UK model: 240V AC 50Hz
Power consumption	HST-D301: 170W HST-D501: 250W
Weight	HST-D301: Approx. 7.5 kg (16 lb 9 oz) HST-D501: Approx. 8.5 kg (18 lb 12 oz)
Dimensions (w/h/d)	HST-D301/D501: Approx. 355 × 295 × 350 mm

Design and specifications subject to change without notice.

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
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MICROFILM

COMPACT HI-FI STEREO SYSTEM

SONY®

TABLE OF CONTENTS

Title Section Page

SPECIFICATION ································ 1

Test-mode by IC153 Display-Control Microcomputer ······································· 2

SECTION 1. GENERAL

Location and Function of Controls ·········· 3

SECTION 2. ADJUSTMENT

2-1. Mechanical Adjustments ················ 4
2-1. Electrical Adjustments ················ 4

SECTION 3. DIAGRAMS

3-1. Block Diagram ························· 8
3-2. Printed Wiring Boards(TC Section) ····· 10
3-3. Schematic Diagrsam(TC Section) ········ 13
3-4. IC Block Diagrams ····················· 15
3-5. Circuit Boards Location················ 16
3-6. Semiconductor Lead Layouts ············ 17
3-7. Printed Wiring Boards(Main Section) ··· 18
3-8. Schematic Diagram(Main Section) ······· 23

SECTION 4. Exploded Views ···················· 29

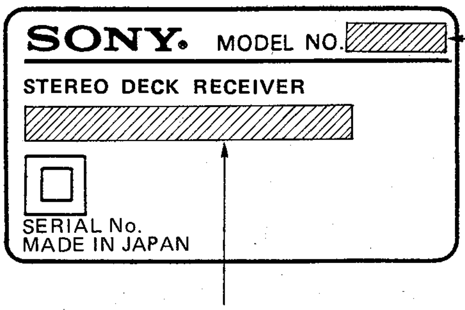
SECTION 5. Electrical Parts List ·················· 34

TEST-MODE BY DISPLAY-CONTROL MICROCOMPUTER (IC153).

- If the power is turned on with the terminals of TP.TEST shorted, all the segments of FL151 will light.
- Before shipment of the unit, the frequencies below are preset in the internal memory of IC153 (tuner system control) and when the leads of C155 (double layers, 0.22F: supplying backup power to IC153) are shorted, the frequencies will be reset in the memory.
- After repair, return the memory to the preceding state (content).

FM		MW		LW	
A1	87.5MHz	A6	531kHz	B1	153kHz
A2	88.0MHz	A7	603kHz	B2	171kHz
A3	98.0	A8	999kHz	B3	216kHz
A4	100.0	A9	1404kHz	B4	261kHz
A5	108.0	A0	1602kHz	B5	281kHz
Last Channel	87.5 MHz	Last Channel	531kHz	Last Channel	153kHz

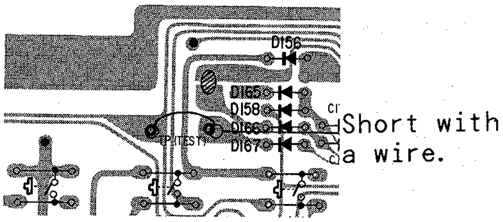
MODEL IDENTIFICATION
—Specification Label—



HST-D301
HST-D301CD } : HST-D301

HST-D501
HST-D501CD
HST-D501CDM } : HST-D501

AEP model: AC: 220V—50/60Hz 170W
UK model: AC: 240V—50/60Hz 250W



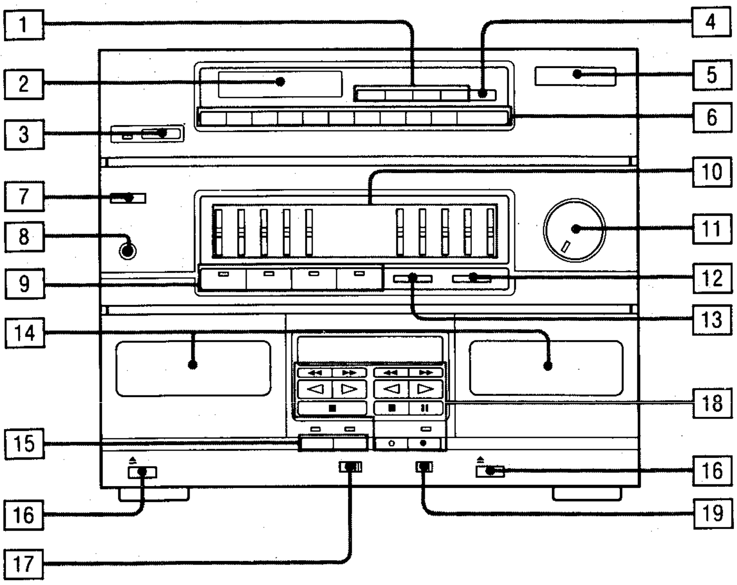
CONTROL BOARD
—Conductive Side—

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1
GENERAL

LOCATION AND FUNCTION OF CONTROLS


1
2
3
7
8
9
14
15
16
17
4
5
6
10
11
12
13
18
16
19

Tuner section

1 TUNING buttons
2 Band/frequency display
3 Remote sensor
4 MEMORY SCAN button
5 BAND SELECTOR
6 Preset buttons

Amplifier section

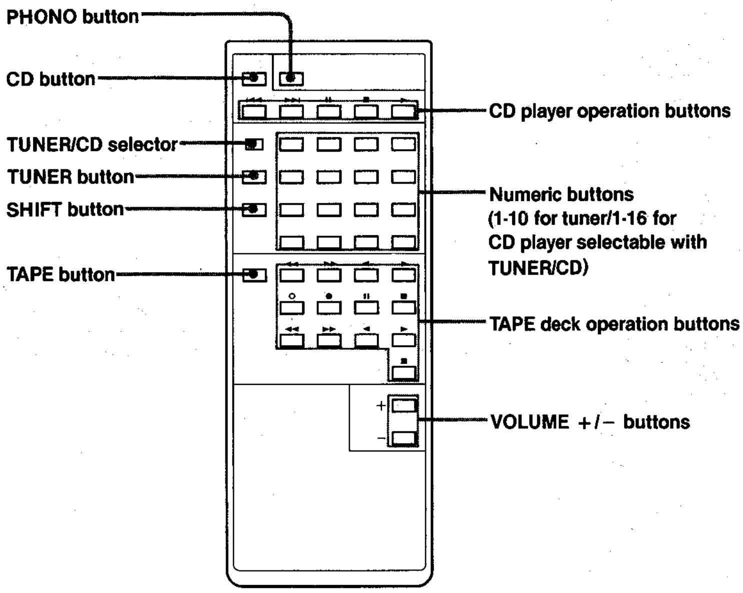
7 POWER switch
8 HEADPHONES jack (stereo phono)
9 FUNCTION selector
10 Graphic equalizer controls (left and right)
11 VOLUME control
12 SURROUND button (HST-D501 only)
13 DBFB button (HST-D501 only)

Cassette deck section

14 Cassette holders
15 DUBBING speed selector
16 ≜ EJECT buttons
17 DIRECTION MODE selector (HST-D501 only)
18 Tape operation buttons
- ◀◀ Leftward fast winding
- ▶▶ Rightward fast winding
- ▷ Forward play
- ◁ Reverse play (HST-D501 only)
- ■ Stop
- ❚❚ Pause
- O Record muting (deck B only)
- ● Record (deck B only)

19 DOLBY NR switch

Remote Commander


PHONO button
CD button
TUNER/CD selector
TUNER button
SHIFT button
TAPE button
CD player operation buttons
Numeric buttons
(1-10 for tuner/1-16 for
CD player selectable with
TUNER/CD)
TAPE deck operation buttons
VOLUME +/− buttons
+
−

SECTION 2
ADJUSTMENTS

2-1. MECHANICAL ADJUSTMENTS
PRECAUTIONS

1. Clean the following parts with a denatured-alxohol-moistened swab:

Record/playback head	pinch roller
erase head	rubber belts
capstan	idlers

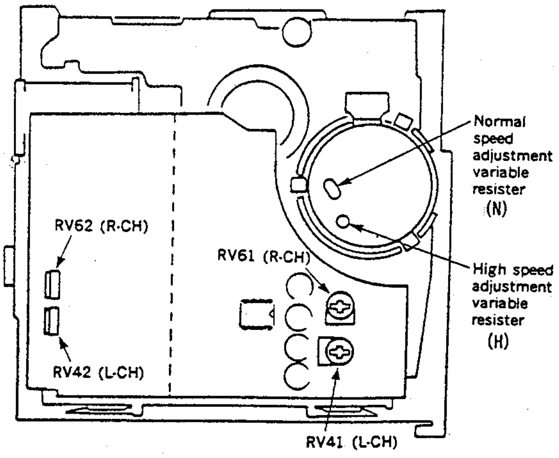
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

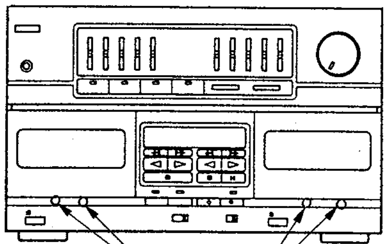
Torque Measurement

Mode		Torque Motor	Torque
FWD		CQ-102C	30 — 70g·cm 0.41 —0.97oz·inch
FWD back tension		CQ-102C	2—6g·cm 0.03 —0.08oz·inch
FF, REW		CQ-201B	90 — 160g·cm 1.25 — 2.22oz·inch
HST-D501 only	REV	CQ-102RB	30 — 70g·cm 0.41 — 0.97oz·inch
	REV back tension	CQ-102RB	2—6g·cm 0.03 — 0.08oz·inch
	FF, REW	CQ-201B	90 — 160g·cm 1.25 — 2.22oz·inch

Adjustment Location:

—MD board—


Normal speed adjustment variable resister
(N)
RV62 (R-CH)
RV61 (R-CH)
High speed adjustment variable resister
(H)
RV42 (L-CH)
RV41 (L-CH)



Adjustment holes
(Illuslration is for HST-D501.)

2-2. ELECTRICAL ADJUSTMENTS
PRECAUTIONS

1. The adjustment should be performed in the order given in this service manual.
   The adjustments should be performed for both L-CH and R-CH.
2. Switches and controls should be set as follows unless otherwise specified.
   DOLBY NR switch: OFF
3. Standard Record:
   Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

Standard Input Level

INPUT terminal	LINE IN
source impedance	10 kΩ
input level	0.25V(-10dB)

Standard Output Level

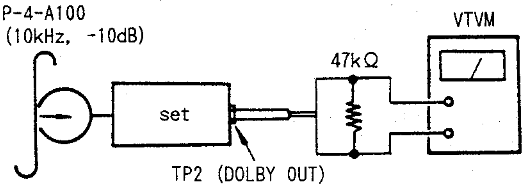
OUTPUT terminal	LINE OUT
load impedance	47 kΩ
output level	0.435V(-5dB)

4. Before Hight speed adjustment short TP1 on POWER AMP BOARD to set the unit in Hight speed mode, and after adjustment open TP1.

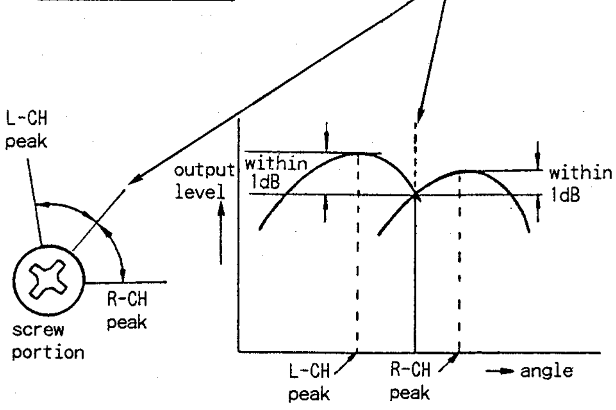
Record/playback Head Azimuth DECK A DECK B

Procedure:

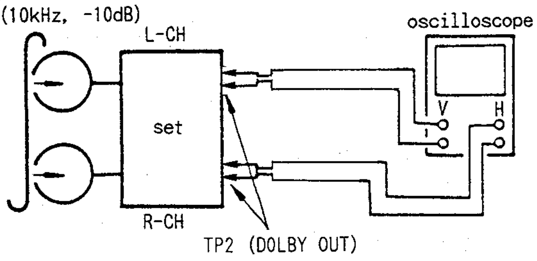
1. Mode: playback
   test tape
   P-4-A100
   (10kHz, -10dB)

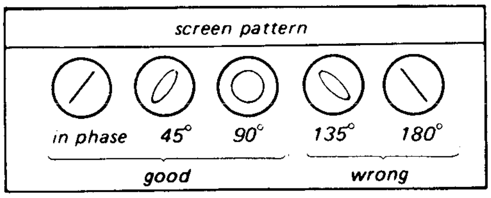

VTVM
47kΩ
set
TP2 (DOLBY OUT)

2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1dB.


L-CH
peak
output
level
within
1dB
within
1dB
screw
portion
R-CH
peak
L-CH
peak
R-CH
peak
angle

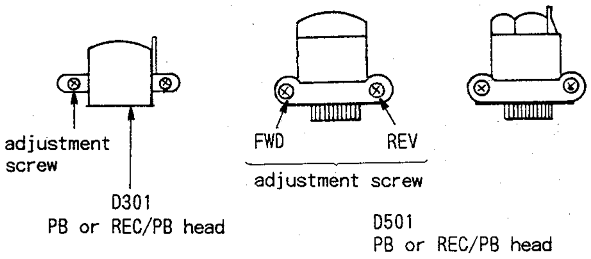
3. Phase Check
   Mode: playback
   test tape
   P-4-A100
   (10kHz, -10dB)


L-CH
set
R-CH
oscilloscope
V
H
TP2 (DOLBY OUT)


screen pattern
in phase
45°
90°
135°
180°
good
wrong

4. Repeat steps 1 — 3 in REV playback mode.
5. After the adjustment, lock the screws with locking compound.

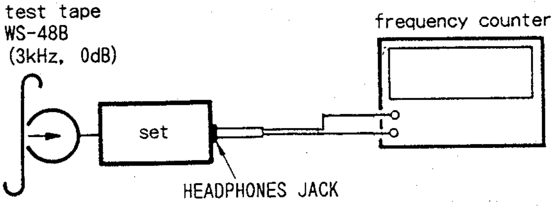
Adjustment Location:


adjustment screw
D301
PB or REC/PB head
FWD
REV
adjustment screw
D501
PB or REC/PB head

Tape Speed Adjustment DECK A DECK B

Procedure:
   Mode: playback

test tape
WS-48B
(3kHz, 0dB)


frequency counter
set
HEADPHONES JACK

(High speed adjustment)

1. Playback WS-48B(Tape center portion) in Hight speed mode.
2. Adjust the deck A(H), deck B(H) so that the frequency counter reads 6000Hz ±60Hz

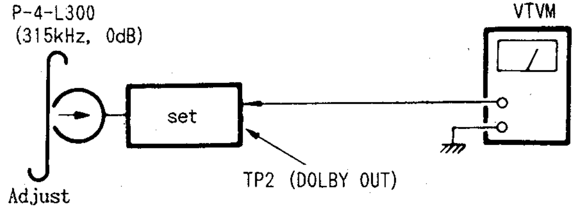
(Normal speed adjustment)

1. Playback WS-48B(Tape center portion) in Normal speed mode.
2. Adjustment the deck A(N), deck B(N) so that at this time the frequency counter reads 3000 ±30Hz. Frequency difference between the beginning and the end of the tape should be within 1.5%.

Adjustment Location: MD-A/-B board (See page 4.)

Playback Level Adjustment DECK A DECK B

Procedure:
   Mode: FWD playback
   test tape
   P-4-L300
   (315kHz, 0dB)


VTVM
set
TP2 (DOLBY OUT)

Adjust
   DECK-A side RV41-A (L-CH), RV61-A (R-CH)
   DECK-B side RV41-B (L-CH), RV61-B (R-CH)
   so that the adjustment limits are satisfied.

Adjustment Limits:
   DOLBY OUT level: -4.2 to -1.2dBs
   level difference between the channels:
   within 1.0dB

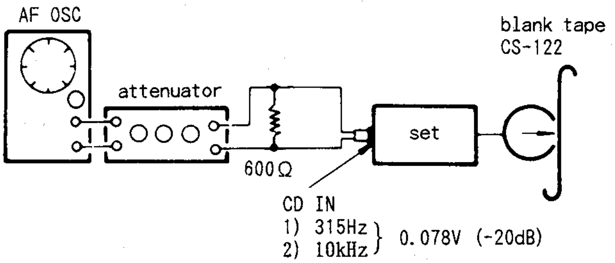
Adjustment Location: MD-A/-B board (See page 4.)

Record BIAS Current Adjustment DECK B

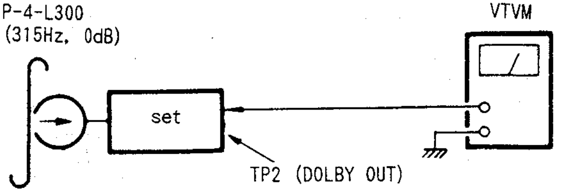
Setting: FUNCTION CD
DOLBY OFF

Procedure:

1. Mode record


AF OSC
attenuator
600Ω
set
blank tape
CS-122
CD IN
1) 315Hz
2) 10kHz
0.078V (-20dB)

2. Mode: playback
   test tape
   P-4-L300
   (315Hz, 0dB)


VTVM
set
TP2 (DOLBY OUT)

(1). Record above signals in blank tape CS-122.
(2). Play the recorded portions and adjust RV42 (L-CH) and RV62 (R-CH) so that the level difference between 315Hz and 10kHz is within ±0.5dB.
(3). Repeat the procedure several times.

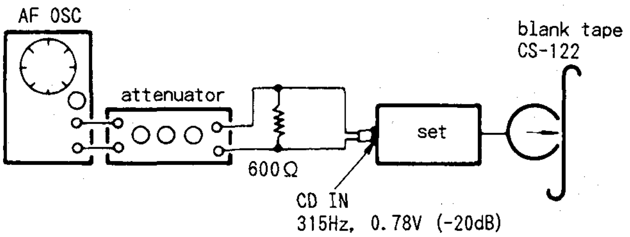
Adjustment Location: MD-A/-B board (See page 4.)

Record Level Adjustment DECK B

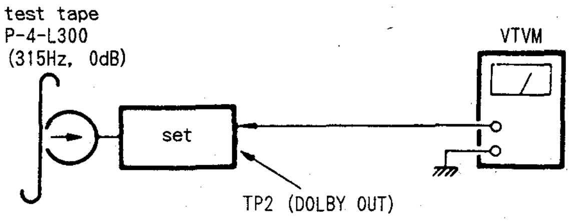
Setting: FUNCTION CD
DOLBY OFF

Procedure:

1. Mode: record


AF OSC
attenuator
600Ω
set
blank tape
CS-122
CD IN
315Hz, 0.78V (-20dB)

2. Mode: playback


test tape
P-4-L300
(315Hz, 0dB)
set
VTVM
TP2 (DOLBY OUT)

(1). Record 315Hz in blank tape CS-122.

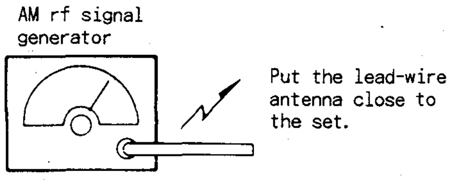
(2). Play the recorded portion and adjust RV501 (L-CH) and RV551(R-CH) so that the playback level at DOLBY OUT is -22.5 ±0.5dBs.

Adjustment Location: Main board

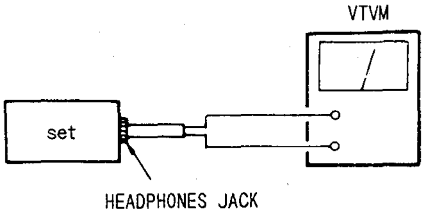
TUNER SECTION

As FM FRONT-END FE1 is adjusted completely before shipping.replace it with a new unit. if meccesary.

- **AM SECTION**

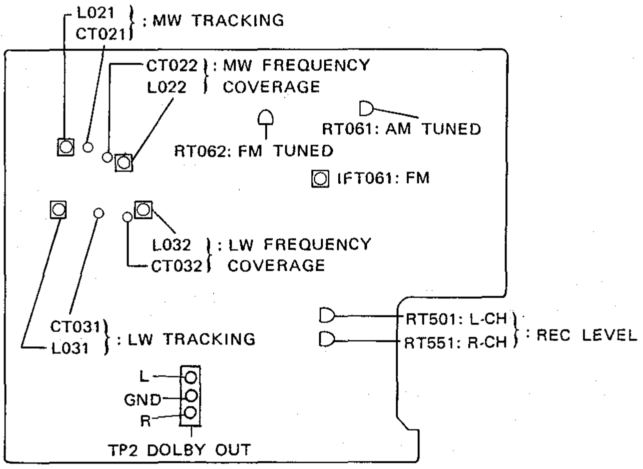

AM rf signal
generator
Put the lead-wire
antenna close to
the set.

30% amplitude modulation by 400Hz signal.
Output level: as low as possible


VTVM
set
HEADPHONES JACK

· Repeat the procedures in each adjustment several times. and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

MAIN BOARD —Component Side—


L021
CT021 : MW TRACKING
CT022 : MW FREQUENCY
L022 COVERAGE
RT061: AM TUNED
RT062: FM TUNED
IFT061: FM
L032 : LW FREQUENCY
CT032 COVERAGE
CT031
L031 : LW TRACKING
RT501: L-CH
RT551: R-CH : REC LEVEL
L
GND
R
TP2 DOLBY OUT

MW Frequency Coverage Adjustment

	Tuned frequency	SG frequency	Adjustment part	Reading on VTVM	CV value
f minimum		531kHz	L022	maximum	1.0 ±0.1V
f maximum		1.602kHz	CT022		9.0 ±0.1V

MW Tracking Adjustment

SG and set frequency	Adjustment part	Reading on VTVM
603kHz	L021	maximum
1.404kHz	CT021	

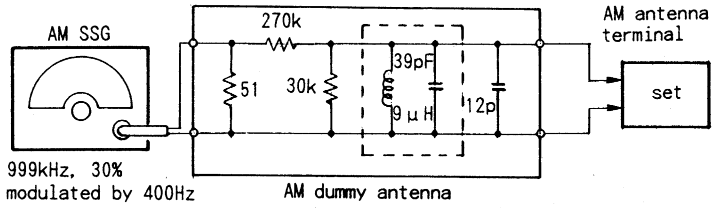
LW Frequency Coverage Adjustment

	Tuened frequency	SG frequency	Adjustment Part	Reading on VTVM	CV value
f minimum		153kHz	L032	maximum	1.1 ±0.1V
f maximum		281kHz	CT032		8.5 ±0.1V

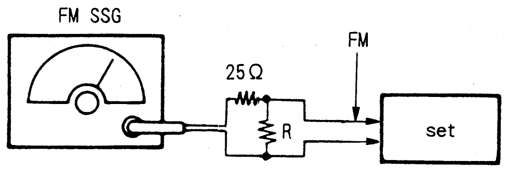
LW Tracking Adjustment

SG and set frequency	Adjustment part	Reading on VTVM
171kHz	L031	maximum
261kHz	CT031	

AM/FM Turned Level Adjustments


AM SSG
270k
51
30k
39pF
9μH
12p
AM antenna terminal
set
AM dummy antenna

999kHz, 30%
modulated by 400Hz


FM SSG
FM
25Ω
R
set

98MHz, 22.5kHz
deviation by 1kHz

R=75 Ω

1. AM (MW) section.
   (1). Apply 999kHz signal of 55 dBμ/m to AM antenna terminal through AM dummy antenna, and tune the set to this signal.
   (2). Adjust RT061 to the point where "TUNED" sign on FL101 just turns light.
   Adjustment limits: 55 ±5 dBμ/m
2. FM section
   (1). Apply 98MHz signal of 25dBμ to FM antenna terminal through FM dummy antenna, and tune the set to this signal.
   (2). Adjust RT062 to the point where "TUNED" sign on FL101 just turns light.
   Adjustment limits: 25 ±1

• FM SECTION

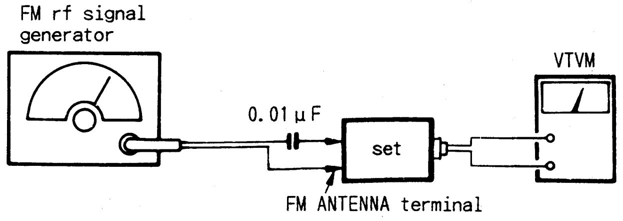
FM CV values (Reference)

Tuned Frequency	CV value
f minimum (87.5MHz)	$8.0 \begin{smallmatrix}+1.0\\-0.3\end{smallmatrix}$ V
f maximum (108MHz)	1.6±0.3V

FM NULL Adjustment

Setting: BAND SELECTOR switch: FM

Procedure:


FM rf signal generator
0.01μF
set
VTVM
FM ANTENNA terminal

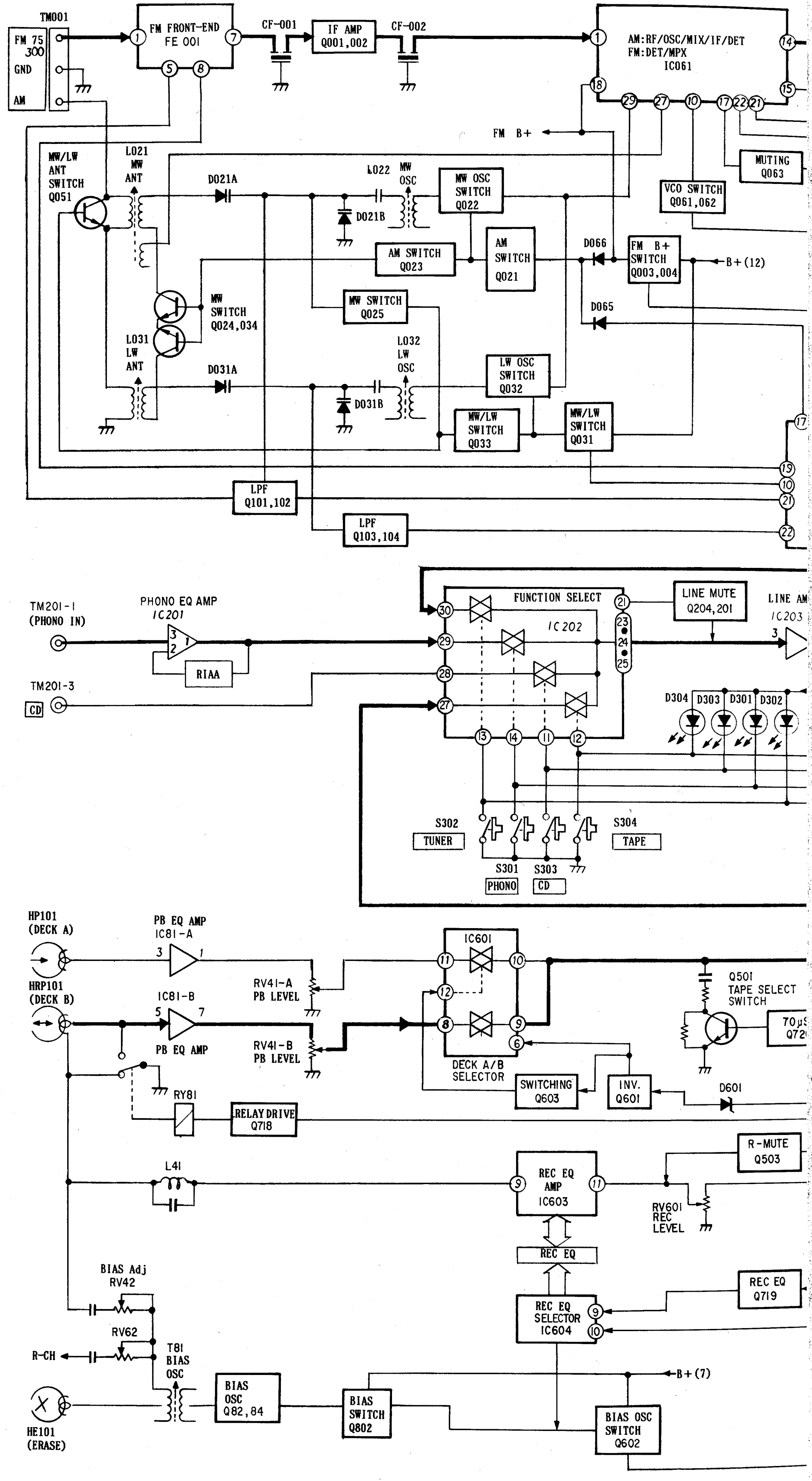
Carrier frequency: 98MHz
Output level: 1mV (60dB)
Modulation: 1kHz, 40kHz deviation

1. Tune the set to 98MHz.
2. Adjust IFT061 for 0V reading on the VTVM.

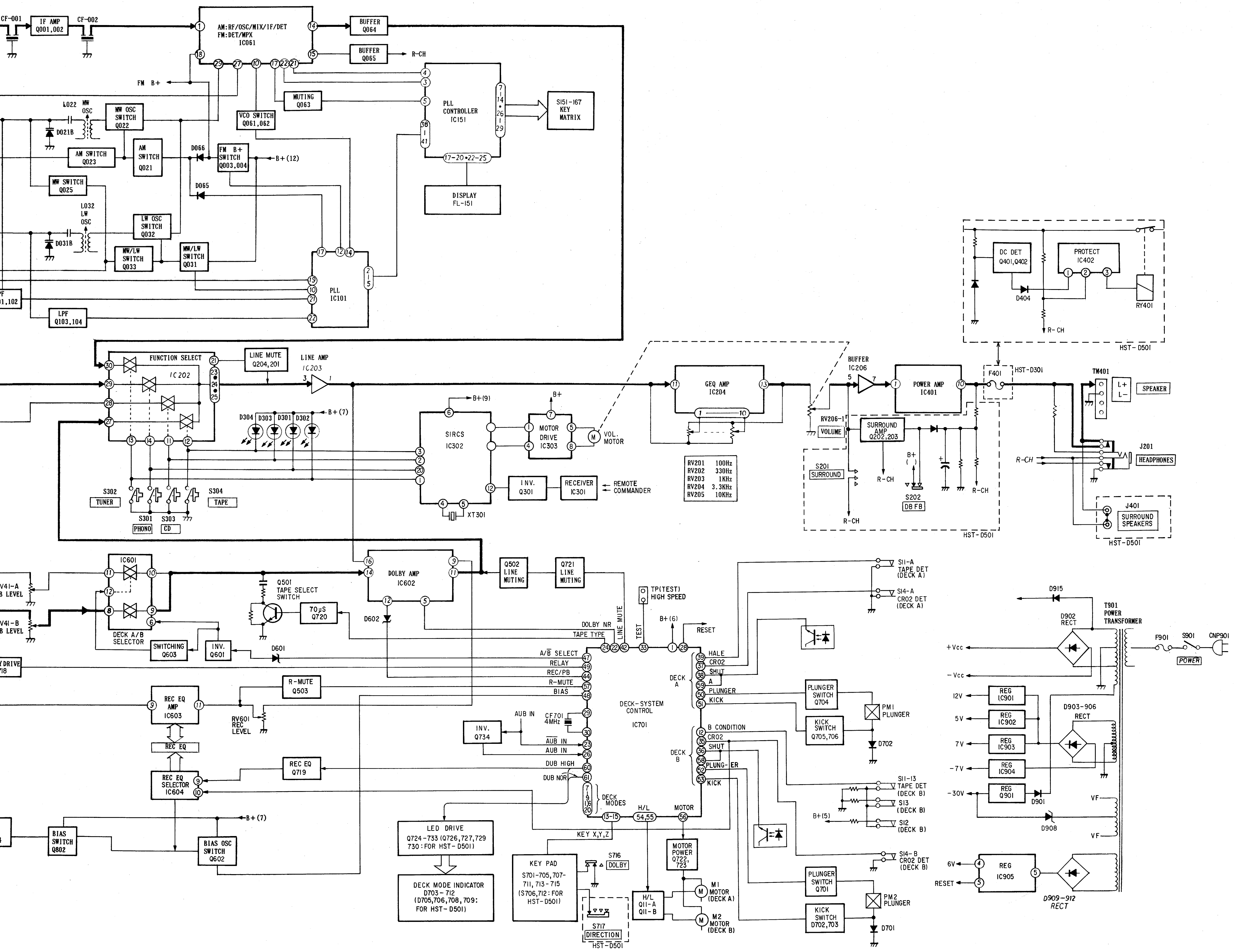
Note: When the ceramic filter is replaced, these adjustments should be made.

SECTION 3
DIAGRAMS

3-1. BLOCK DIAGRAM


TM001
FM 75
300
GND
AM
FM FRONT-END
FE 001
CF-001
IF AMP
Q001,002
CF-002
AM:RF/OSC/MIX/IF/DET
FM:DET/MPX
IC061
FM B+
MUTING
Q063
VCO SWITCH
Q061,062
MW/LW ANT SWITCH
Q051
L021
MW
ANT
D021A
L022
MW
OSC
D021B
MW OSC SWITCH
Q022
AM SWITCH
Q023
AM SWITCH
Q021
D066
FM B+ SWITCH
Q003,004
B+(12)
MW SWITCH
Q024,034
MW SWITCH
Q025
D065
L031
LW
ANT
D031A
L032
LW
OSC
D031B
LW OSC SWITCH
Q032
MW/LW SWITCH
Q033
MW/LW SWITCH
Q031
LPF
Q101,102
LPF
Q103,104
TM201-1
(PHONO IN)
PHONO EQ AMP
IC201
RIAA
TM201-3
CD
FUNCTION SELECT
IC202
LINE MUTE
Q204,201
LINE AM
IC203
D304
D303
D301
D302
S302
TUNER
S301
PHONO
S303
CD
S304
TAPE
HP101
(DECK A)
PB EQ AMP
IC81-A
HRP101
(DECK B)
IC81-B
PB EQ AMP
RV41-A
PB LEVEL
RV41-B
PB LEVEL
IC601
DECK A/B
SELECTOR
Q501
TAPE SELECT
SWITCH
70μS
Q72
SWITCHING
Q603
INV.
Q601
D601
RY81
RELAY DRIVE
Q718
L41
REC EQ
AMP
IC603
R-MUTE
Q503
RV601
REC
LEVEL
REC EQ
REC EQ
Q719
REC EQ
SELECTOR
IC604
BIAS Adj
RV42
RV62
R-CH
T81
BIAS
OSC
BIAS
OSC
Q82,84
BIAS
SWITCH
Q802
BIAS OSC
SWITCH
Q602
B+(7)
HE101
(ERASE)

SECTION 3
DIAGRAMS


CF-001
IF AMP Q001,002
CF-002
AM:RF/OSC/MIX/IF/DET FM:DET/MPX IC061
BUFFER Q064
BUFFER Q065
R-CH
FM B+
MUTING Q063
PLL CONTROLLER IC151
S151-167 KEY MATRIX
DISPLAY FL-151
L022 MW OSC
MW OSC SWITCH Q022
D021B
AM SWITCH Q023
AM SWITCH Q021
D066
FM B+ SWITCH Q003,004
B+(12)
VCO SWITCH Q061,062
D065
MW SWITCH Q025
L032 LW OSC
LW OSC SWITCH Q032
D031B
MW/LW SWITCH Q033
MW/LW SWITCH Q031
PLL IC101
LPF Q103,104
FUNCTION SELECT IC202
LINE MUTE Q204,201
LINE AMP IC203
D304 D303 D301 D302
B+(7)
B+(9)
B+
SIRCS IC302
MOTOR DRIVE IC303
VOL. MOTOR
INV. Q301
RECEIVER IC301
REMOTE COMMANDER
XT301
S302 TUNER
S301 PHONO
S303 CD
S304 TAPE
GEQ AMP IC204
RV201 100Hz
RV202 330Hz
RV203 1KHz
RV204 3.3KHz
RV205 10KHz
BUFFER IC206
RV206-1 VOLUME
SURROUND AMP Q202,203
S201 SURROUND
S202 DBFB
POWER AMP IC401
DC DET Q401,Q402
PROTECT IC402
D404
RY401
HST-D501
F401
HST-D301
TM401
L+ L−
SPEAKER
J201 HEADPHONES
J401 SURROUND SPEAKERS
IC601
RV41-A B LEVEL
RV41-B B LEVEL
Q501 TAPE SELECT SWITCH
70μS Q720
DOLBY AMP IC602
D602
Q502 LINE MUTING
Q721 LINE MUTING
DECK A/B SELECTOR
SWITCHING Q603
INV. Q601
D601
TP(TEST) HIGH SPEED
B+(6)
RESET
DOLBY NR
TAPE TYPE
LINE MUTE
TEST
A/B SELECT
RELAY
REC/PB
R-MUTE
BIAS
DECK-SYSTEM CONTROL IC701
AUB IN
CF701 4MHz
INV. Q734
DUB HIGH
DUB NOR
DECK MODES
H/L
MOTOR
KEY X,Y,Z
HALE
CRO2
SHUT
A
PLUNGER
KICK
DECK A
B CONDITION
CRO2
SHUT
B
PLUNG-ER
KICK
DECK B
S11-A TAPE DET (DECK A)
S14-A CRO2 DET (DECK A)
PLUNGER SWITCH Q704
PM1 PLUNGER
KICK SWITCH Q705,706
D702
S11-13 TAPE DET (DECK B)
S13 (DECK B)
S12 (DECK B)
B+(5)
S14-B CRO2 DET (DECK B)
PLUNGER SWITCH Q701
PM2 PLUNGER
KICK SWITCH Q702,703
D701
/DRIVE 18
R-MUTE Q503
REC EQ AMP IC603
RV601 REC LEVEL
REC EQ
REC EQ Q719
REC EQ SELECTOR IC604
BIAS SWITCH Q802
BIAS OSC SWITCH Q602
LED DRIVE Q724-733 (Q726,727,729 730: FOR HST-D501)
DECK MODE INDICATOR D703-712 (D705,706,708,709: FOR HST-D501)
KEY PAD S701-705,707-711,713-715 (S706,712: FOR HST-D501)
S716 DOLBY
S717 DIRECTION HST-D501
H/L Q11-A Q11-B
MOTOR POWER Q722,723
M1 MOTOR (DECK A)
M2 MOTOR (DECK B)
D915
D902 RECT
T901 POWER TRANSFORMER
F901
S901 POWER
CNP901
+Vcc
−Vcc
12V REG IC901
5V REG IC902
7V REG IC903
−7V REG IC904
−30V REG Q901
D901
D903-906 RECT
D908
VF
6V
RESET
REG IC905
D909-912 RECT

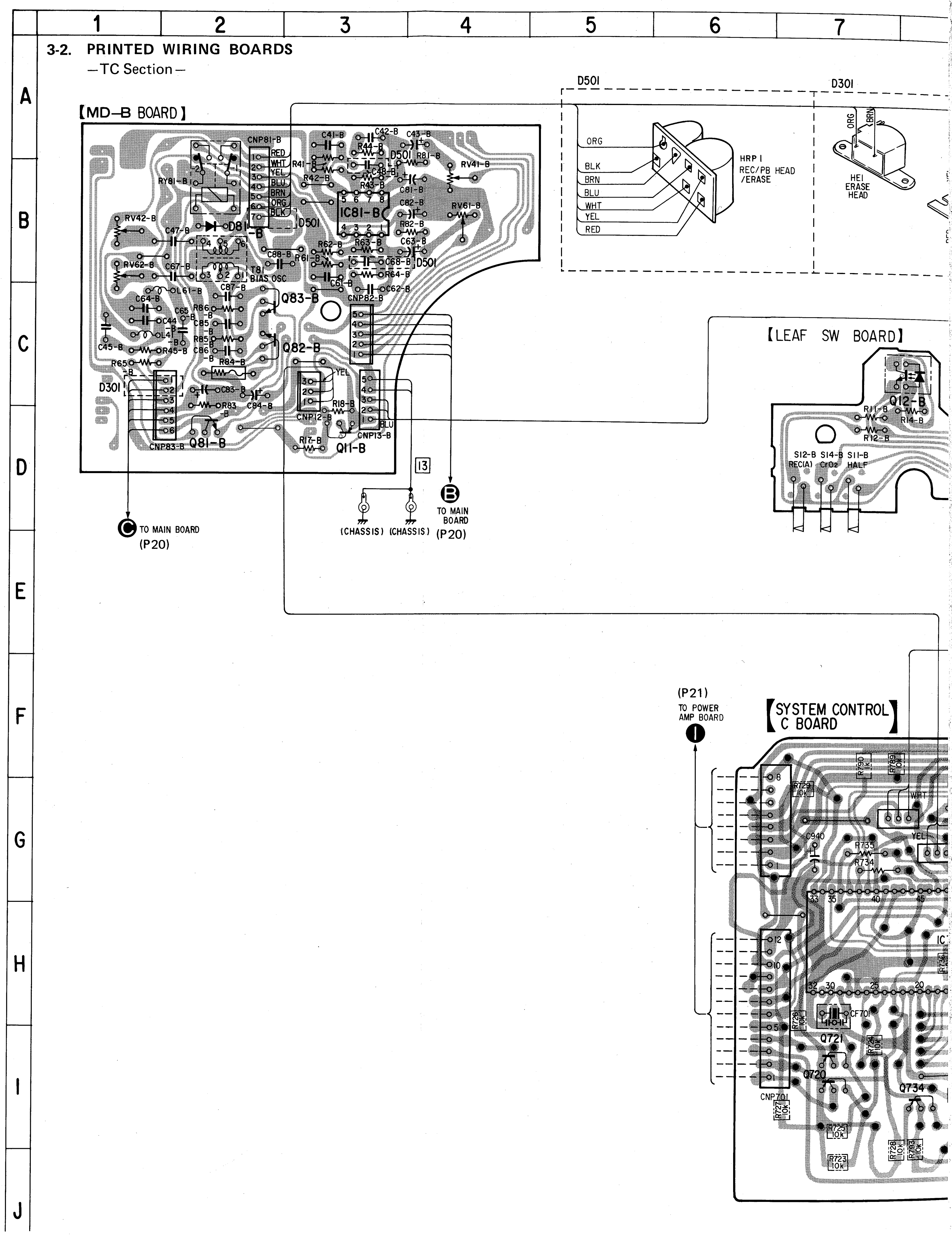
- **Semiconductor Location**

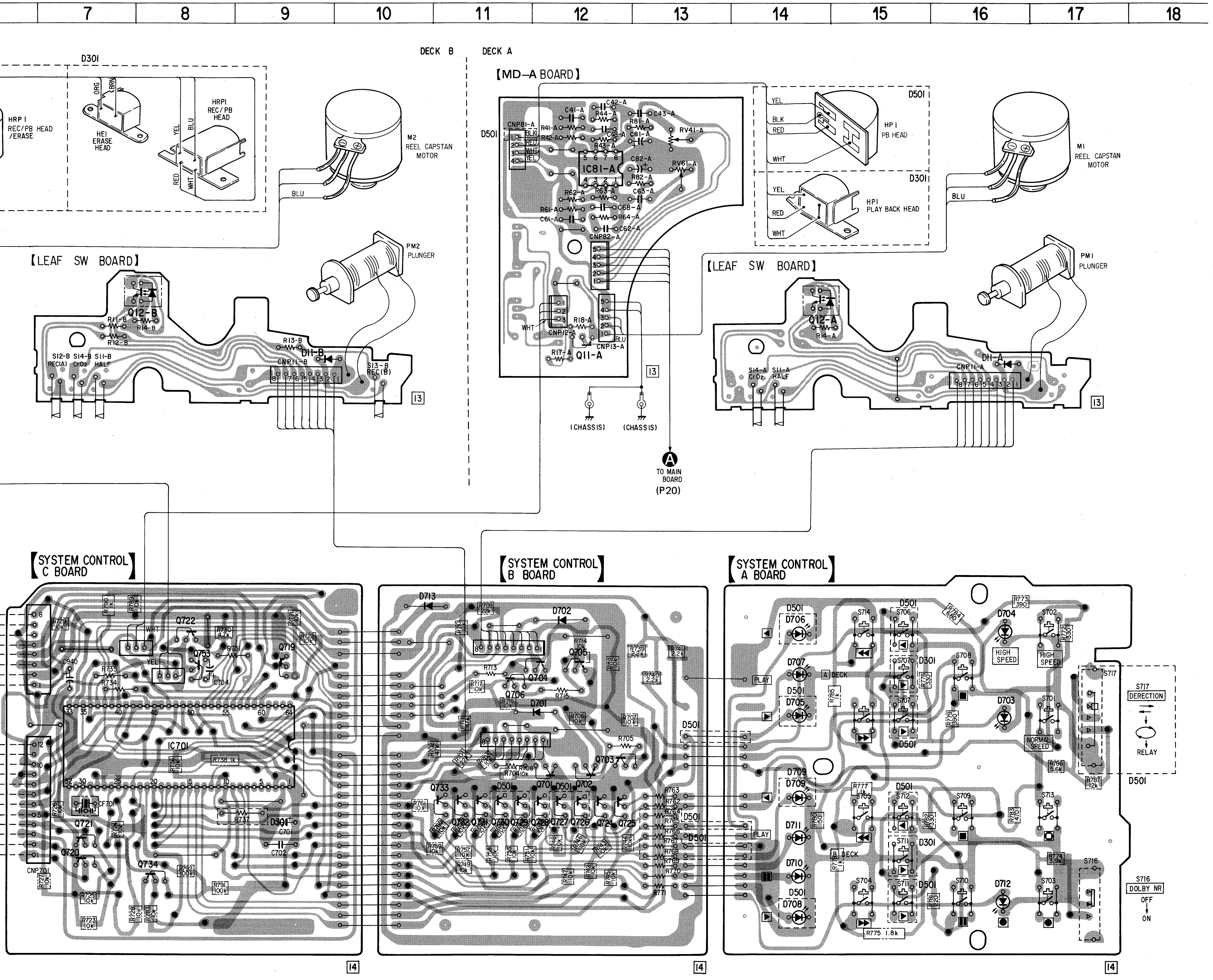
Ref. No.	Location	Ref. No.	Location
D81	B-2	Q701	H-12
D701	G-12	Q702	H-12
D702	G-12	Q703	H-12
D703	G-16	Q704	G-12
D704	G-16	Q705	G-12
D705	G-16	Q706	G-11
D706	G-14	Q719	G-9
D707	G-14	Q720	I-7
D708	G-14	Q721	I-7
D709	G-14	Q722	G-8
D710	I-14	Q723	G-8
D711	I-14	Q724	H-12
D712	I-16	Q725	H-12
D713	F-10	Q726	H-12
		Q727	H-12
IC81	B-3	Q728	H-12
IC701	H-8	Q729	H-11
		Q730	H-11
Q11	D-3	Q731	H-11
Q12	C-8	Q732	H-11
Q81	D-2	Q733	H-11
Q82	C-3	Q734	I-8
Q83	C-3		

- ○—— : Parts extracted from the component side.
- ● : Through hole.
- ░ : Pattern on the side which is seen.
- ░ : Pattern of the rear side.

3-2. PRINTED WIRING BOARDS

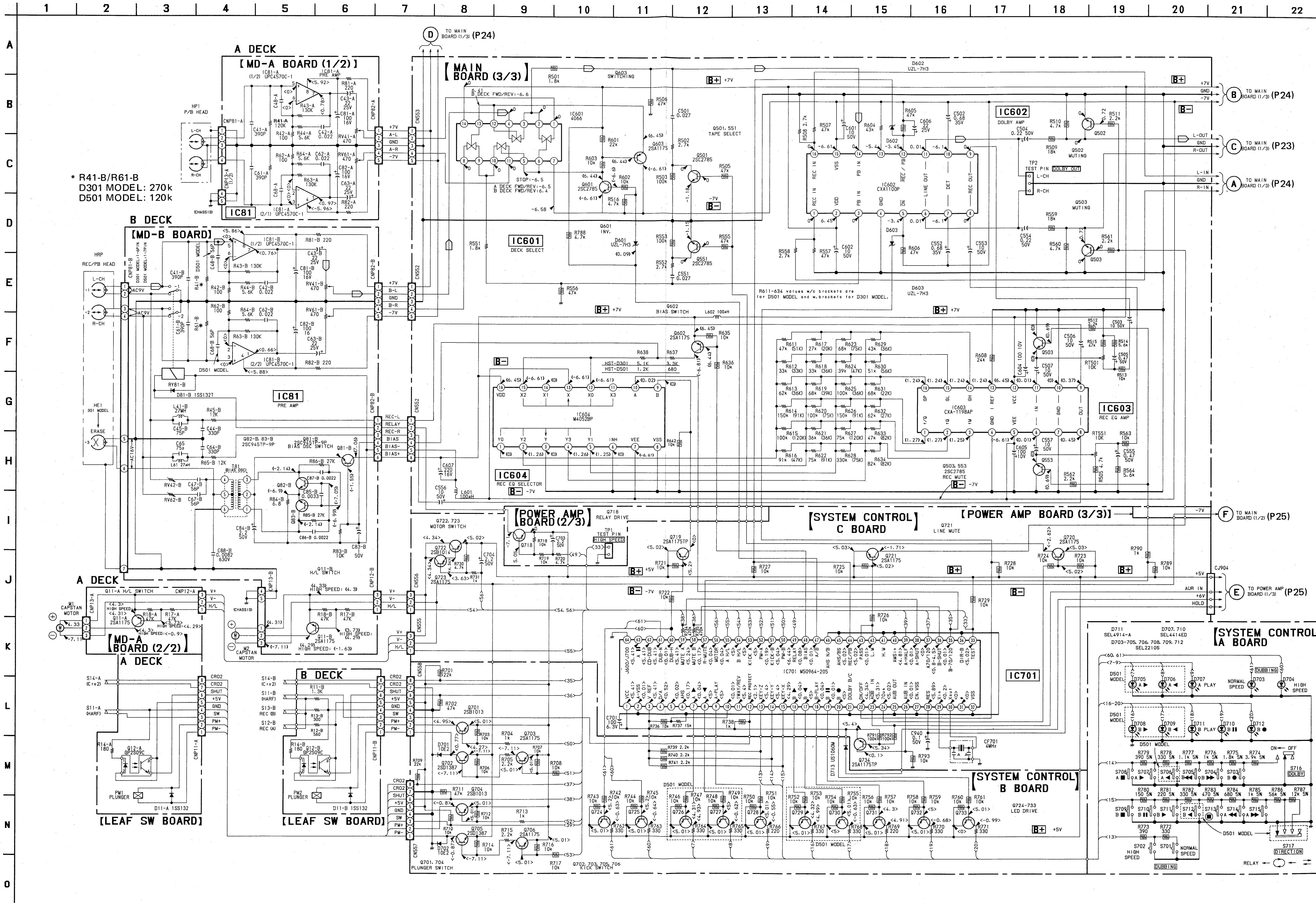
—TC Section—


1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
【MD–B BOARD】
D501
D301
ORG
BLK
BRN
BLU
WHT
YEL
RED
HRP1
REC/PB HEAD
/ERASE
HE1
ERASE
HEAD
CNP81-B
RY81-B
RV42-B
RV62-B
RV41-B
RV61-B
IC81-B
D81-B
T81
BIAS OSC
Q83-B
Q82-B
Q81-B
Q11-B
CNP82-B
CNP83-B
CNP12-B
CNP13-B
13
TO MAIN BOARD
(P20)
(CHASSIS)
(CHASSIS)
TO MAIN BOARD
(P20)
【LEAF SW BOARD】
Q12-B
S12-B REC(A)
S14-B CrO2
S11-B HALF
(P21)
TO POWER AMP BOARD
【SYSTEM CONTROL C BOARD】
CNP701
CF701
Q720
Q721
Q734
C940
R734
R735

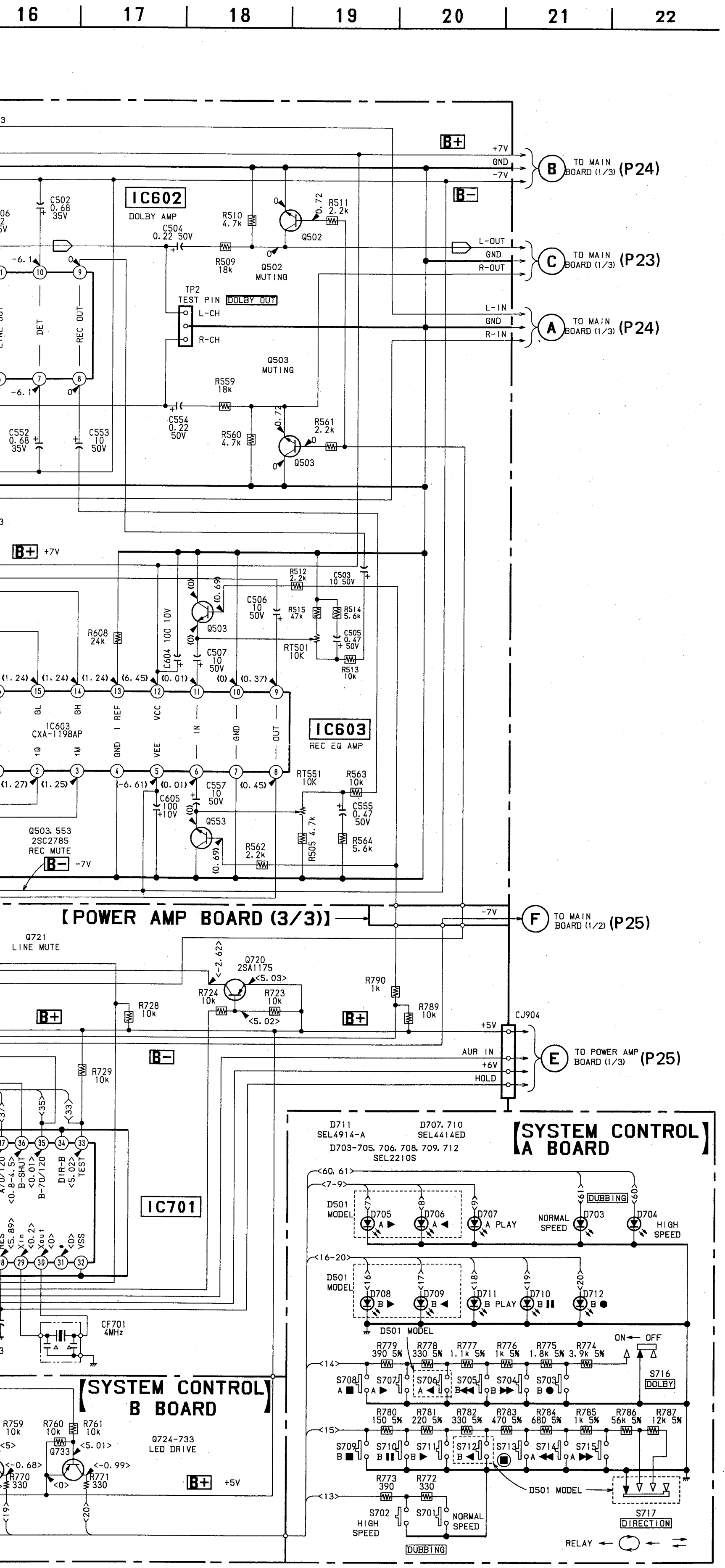

7
8
9
10
11
12
13
14
15
16
17
18
DECK B
DECK A
D301
HRP1
REC/PB HEAD
/ERASE
HE1
ERASE
HEAD
HRP1
REC/PB
HEAD
ORG
BRN
YEL
BLU
RED
WHT
M2
REEL CAPSTAN
MOTOR
PM2
PLUNGER
【MD-A BOARD】
D501
IC81-A
CNP81-A
CNP82-A
CNP12-A
CNP13-A
Q11-A
RV41-A
RV61-A
(CHASSIS)
(CHASSIS)
TO MAIN
BOARD
(P20)
HP1
PB HEAD
HP1
PLAY BACK HEAD
M1
REEL CAPSTAN
MOTOR
PM1
PLUNGER
【LEAF SW BOARD】
Q12-B
D11-B
CNP11-B
S12-B REC(A)
S14-B CrO2
S11-B HALF
S13-B REC(B)
【LEAF SW BOARD】
Q12-A
D11-A
CNP11-A
S14-A CrO2
S11-A HALF
13
【SYSTEM CONTROL C BOARD】
IC701
Q722
Q719
Q721
Q720
Q734
Q753
CNP701
【SYSTEM CONTROL B BOARD】
D713
D702
D701
Q705
Q704
Q706
Q703
Q733
【SYSTEM CONTROL A BOARD】
D706
D707
D705
D709
D711
D710
D708
D704
D703
D712
HIGH SPEED
HIGH SPEED
NORMAL SPEED
A DECK
B DECK
PLAY
S717
DERECTION
RELAY
S716
DOLBY NR
OFF
ON
14

3-3. SCHEMATIC DIAGRAM • See page 17 for Semiconductor Lead Layouts.

—TC Section—

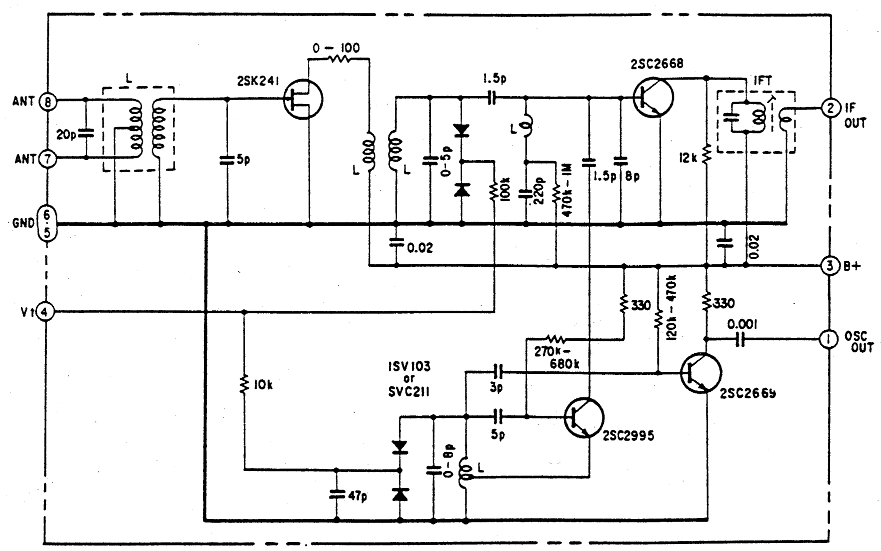


A DECK
[MD-A BOARD (1/2)]
HP1 P/B HEAD
IC81 PRE AMP
* R41-B/R61-B
D301 MODEL: 270k
D501 MODEL: 120k
B DECK
[MD-B BOARD]
HRP REC/PB HEAD
HE1 301 MODEL ERASE
[MAIN BOARD (3/3)]
D TO MAIN BOARD (1/3) (P24)
IC601 DECK SELECT
IC602 DOLBY AMP
IC603 REC EQ AMP
IC604 REC EQ SELECTOR
B TO MAIN BOARD (1/3) (P24)
C TO MAIN BOARD (1/3) (P23)
A TO MAIN BOARD (1/3) (P24)
F TO MAIN BOARD (1/2) (P25)
E TO POWER AMP BOARD (1/3) (P25)
[POWER AMP BOARD (2/3)]
[POWER AMP BOARD (3/3)]
[SYSTEM CONTROL C BOARD]
[SYSTEM CONTROL B BOARD]
[SYSTEM CONTROL A BOARD]
IC701
[MD-A BOARD (2/2)]
A DECK
B DECK
[LEAF SW BOARD]
[LEAF SW BOARD]
M1 CAPSTAN MOTOR
M2 CAPSTAN MOTOR
Q701, 704 PLUNGER SWITCH
Q702, 703, 705, 706 KICK SWITCH
Q724-733 LED DRIVE
RELAY
S717 DIRECTION
S716 DOLBY
R611-634 values w/o brackets are for D501 MODEL and w.brackets for D301 MODEL.

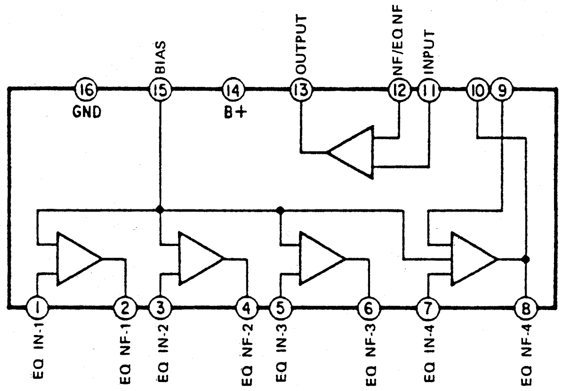

16
17
18
19
20
21
22
IC602
DOLBY AMP
IC603
REC EQ AMP
TO MAIN BOARD (1/3) (P24)
TO MAIN BOARD (1/3) (P23)
TO MAIN BOARD (1/3) (P24)
[POWER AMP BOARD (3/3)]
TO MAIN BOARD (1/2) (P25)
TO POWER AMP BOARD (1/3) (P25)
Q721 LINE MUTE
Q720 2SA1175
IC701
CF701 4MHz
[SYSTEM CONTROL B BOARD]
[SYSTEM CONTROL A BOARD]
Q724-733 LED DRIVE
Q503, 553 2SC2785 REC MUTE
S716 DOLBY
S717 DIRECTION
RELAY
DUBBING
NORMAL SPEED
HIGH SPEED

3-4. IC BLOCK DIAGRAM

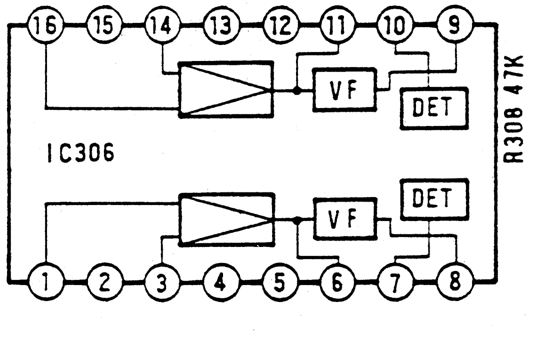
- FM FRONT-END (FE 101)


ANT
ANT
GND
V1
2SK241
2SC2668
2SC2669
2SC2995
1SV103 or SVC211
IFT
IF OUT
B+
OSC OUT

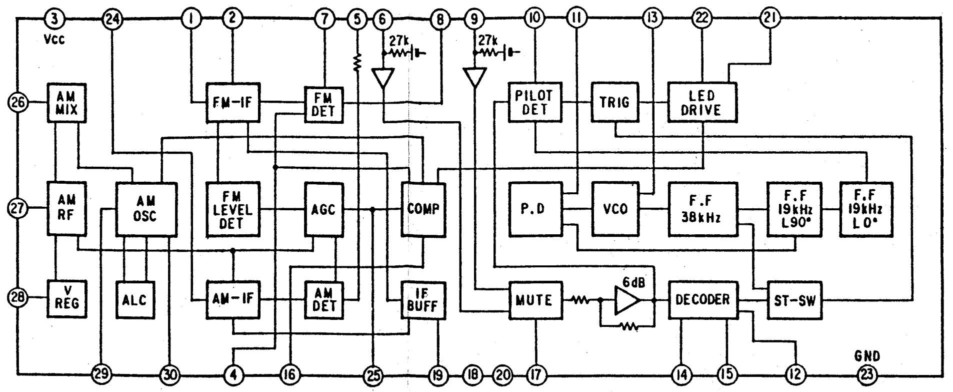
- IC204,205 M5226P


GND
BIAS
B+
OUTPUT
NF/EQ NF
INPUT
EQ IN-1
EQ NF-1
EQ IN-2
EQ NF-2
EQ IN-3
EQ NF-3
EQ IN-4
EQ NF-4

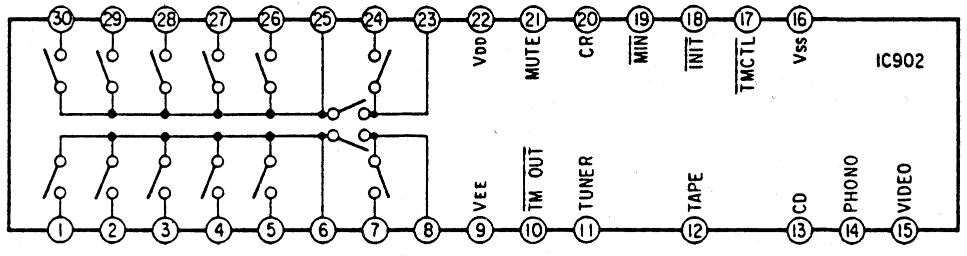
- IC602 CXA1100P


VF
DET
VF
DET
IC306
R308 47K

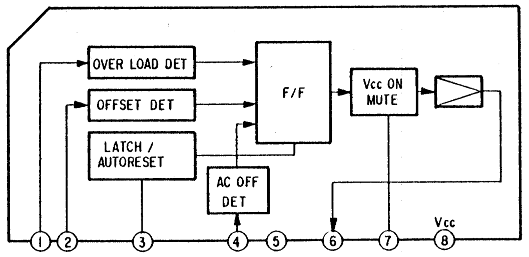
- IC061 LA1851N


Vcc
AM MIX
AM RF
V REG
FM-IF
FM DET
AM OSC
FM LEVEL DET
AGC
COMP
ALC
AM-IF
AM DET
IF BUFF
PILOT DET
TRIG
LED DRIVE
P.D
VCO
F.F 38kHz
F.F 19kHz L90°
F.F 19kHz L0°
MUTE
6dB
DECODER
ST-SW
GND

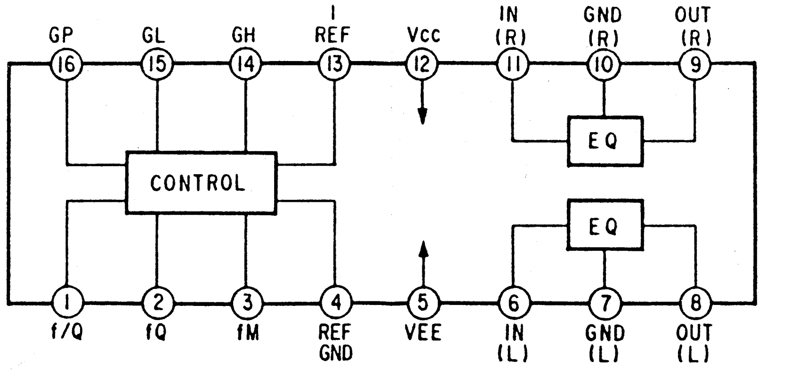
- IC202 LC7818


VDD
MUTE
CR
MIN
INIT
TMCTL
Vss
IC902
VEE
TM OUT
TUNER
TAPE
CD
PHONO
VIDEO

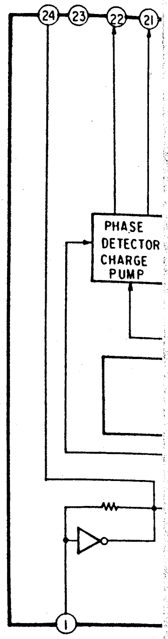
- IC402 μ1237HA


OVER LOAD DET
OFFSET DET
LATCH / AUTORESET
AC OFF DET
F/F
Vcc ON MUTE
Vcc

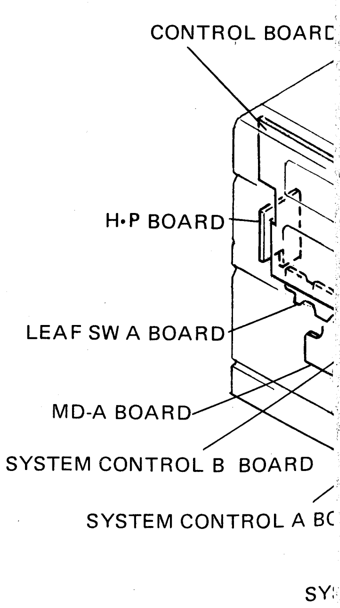
- IC603 CXA1198AP


GP
GL
GH
I REF
Vcc
IN (R)
GND (R)
OUT (R)
CONTROL
EQ
EQ
f/Q
fQ
fM
REF GND
VEE
IN (L)
GND (L)
OUT (L)

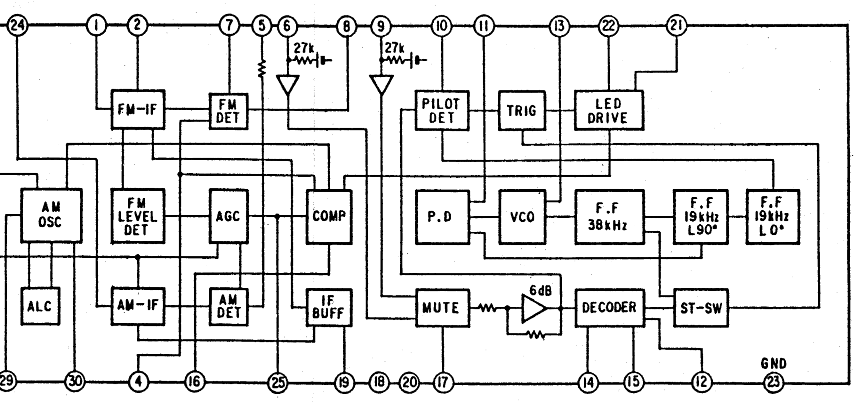
- IC101 LC7


PHASE DETECTOR CHARGE PUMP

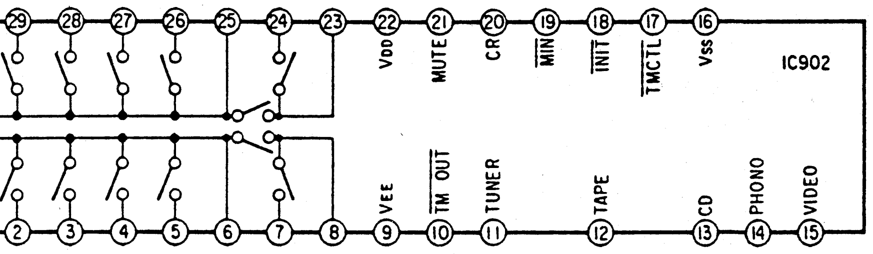
3-5. SIRCUIT BOARDS LOC


CONTROL BOARD
H•P BOARD
LEAF SW A BOARD
MD-A BOARD
SYSTEM CONTROL B BOARD
SYSTEM CONTROL A BC
SY

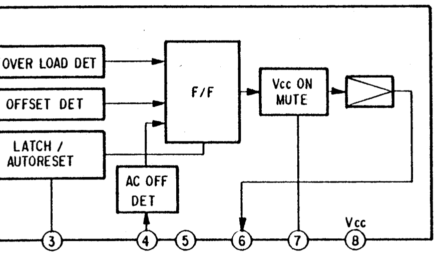
1 LA1851N


24
1
2
7
5
6
8
9
10
11
13
22
21
27k
27k
FM-IF
FM DET
PILOT DET
TRIG
LED DRIVE
AM OSC
FM LEVEL DET
AGC
COMP
P.D
VCO
F.F 38kHz
F.F 19kHz L90°
F.F 19kHz L0°
ALC
AM-IF
AM DET
IF BUFF
MUTE
6dB
DECODER
ST-SW
GND
29
30
4
16
25
19
18
20
17
14
15
12
23

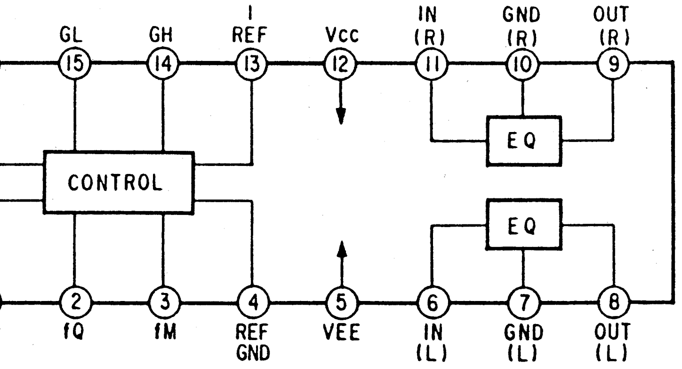
2 LC7818


29
28
27
26
25
24
23
22
21
20
19
18
17
16
VDD
MUTE
CR
MIN
INIT
TMCTL
VSS
IC902
VEE
TM OUT
TUNER
TAPE
CD
PHONO
VIDEO
2
3
4
5
6
7
8
9
10
11
12
13
14
15

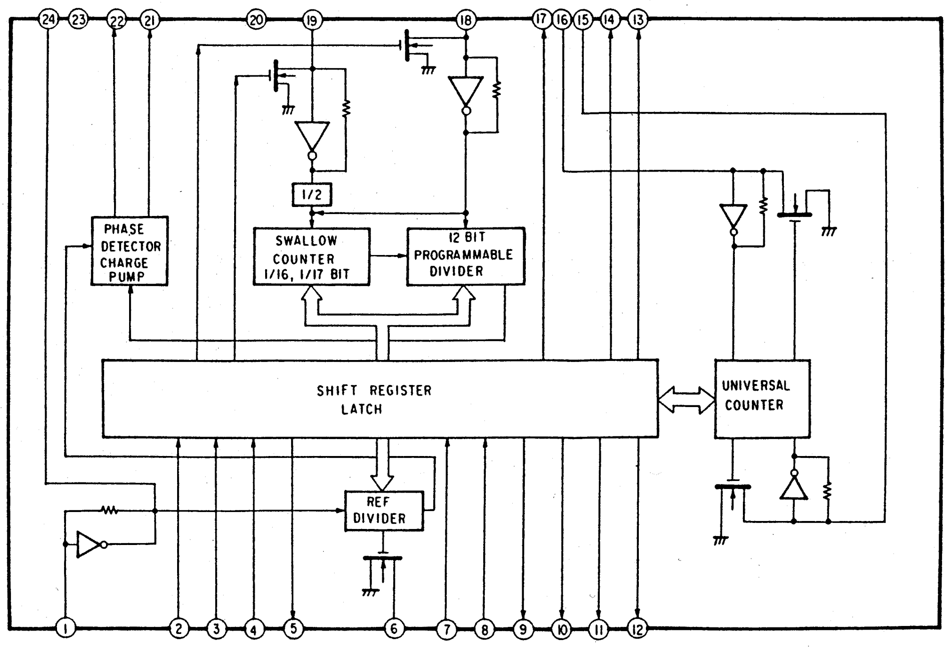
2 µ1237HA


OVER LOAD DET
OFFSET DET
LATCH / AUTORESET
F/F
Vcc ON MUTE
AC OFF DET
Vcc
3
4
5
6
7
8

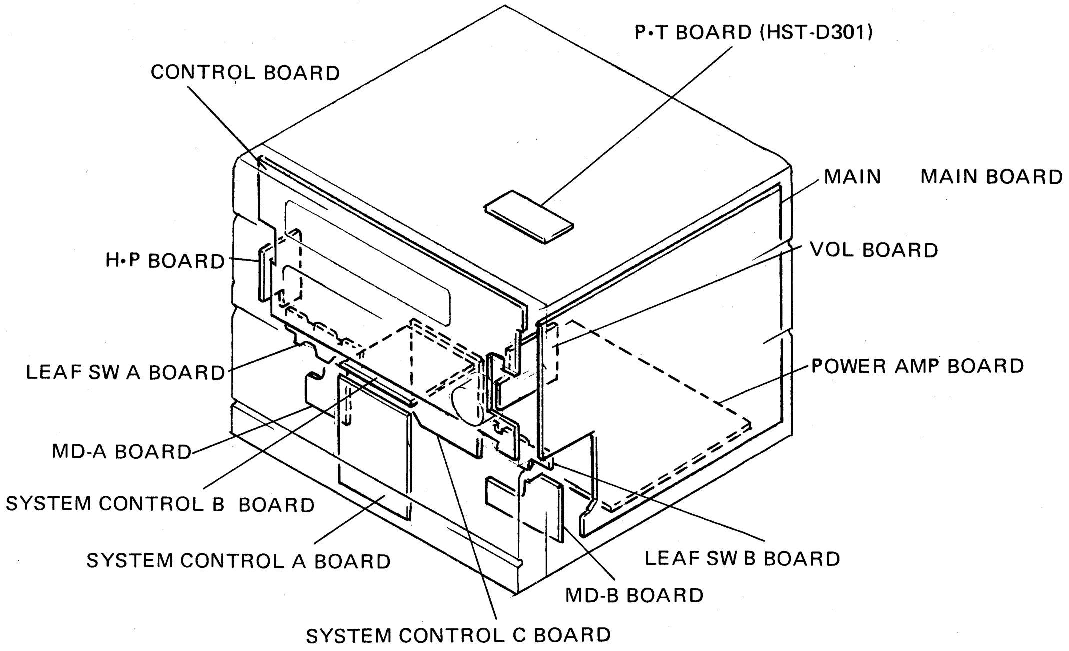
03 CXA1198AP


GL
GH
I REF
Vcc
IN (R)
GND (R)
OUT (R)
15
14
13
12
11
10
9
CONTROL
EQ
EQ
2
3
4
5
6
7
8
fQ
fM
REF GND
VEE
IN (L)
GND (L)
OUT (L)

● IC101 LC7218

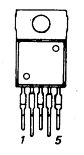

24
23
22
21
20
19
18
17
16
15
14
13
PHASE DETECTOR CHARGE PUMP
1/2
SWALLOW COUNTER 1/16, 1/17 BIT
12 BIT PROGRAMMABLE DIVIDER
SHIFT REGISTER LATCH
UNIVERSAL COUNTER
REF DIVIDER
1
2
3
4
5
6
7
8
9
10
11
12

3-5. SIRCUIT BOARDS LOCATION

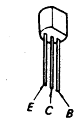

CONTROL BOARD
P·T BOARD (HST-D301)
MAIN
MAIN BOARD
H·P BOARD
VOL BOARD
LEAF SW A BOARD
POWER AMP BOARD
MD-A BOARD
SYSTEM CONTROL B BOARD
SYSTEM CONTROL A BOARD
LEAF SW B BOARD
MD-B BOARD
SYSTEM CONTROL C BOARD

3-6. SEMICONDUCTOR LEAD LAYOUTS

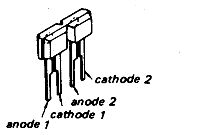
L78MR006



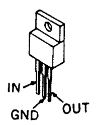
2SA733
2SB1013
2SB1187-EF
2SC1841
2SC3112
2SD1387



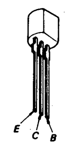
KV1230-D


cathode 2
anode 2
cathode 1
anode 1

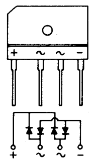
M5F7805
M5F7807
M5F7812



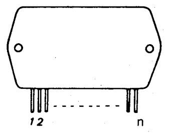
2SB1014



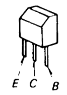
RBV-402-01
RBV-602



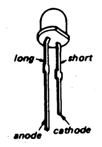
STK4132II
STK4152II



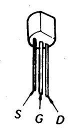
2SD774



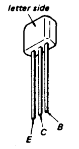
SEL2210SC


long
short
anode
cathode

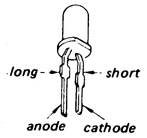
2SK246GR



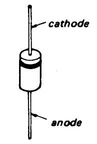
BA1A4M-TP
2SC2785


letter side
E C B

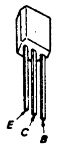
SEL-2410EC


long
short
anode
cathode

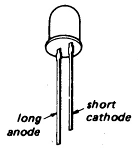
HZS-6C31
US1060M
UZL-7H3
UZL-27M
UZP-6.8B
10E2N


cathode
anode

DTA114ES
DTC114ES
2SC2724

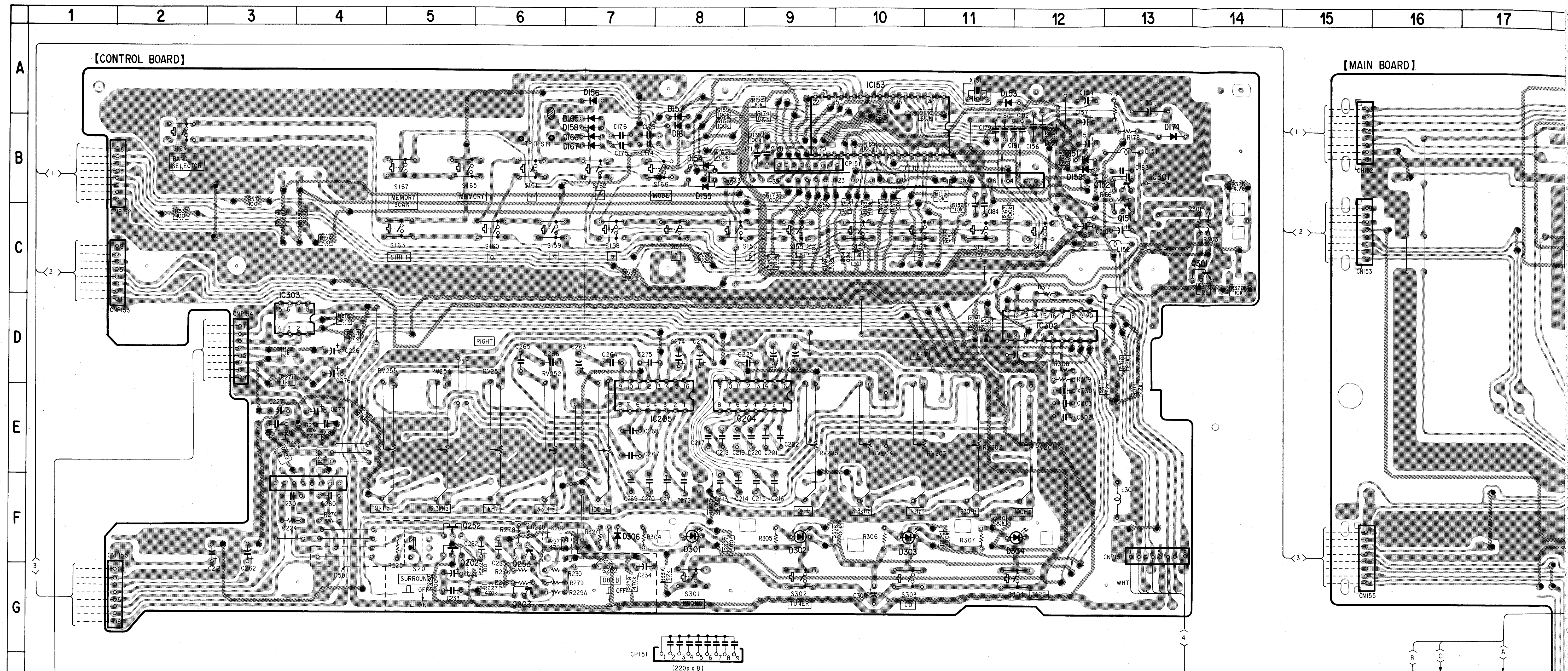


SEL4414E-D
SEL4914D


long
anode
short
cathode

3-7. PRINTED WIRING BOARDS

—Main Section—


1
2
3
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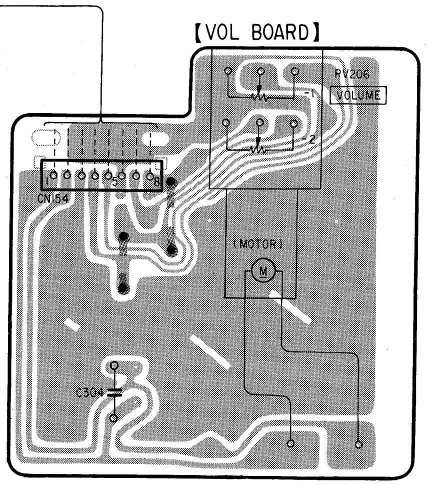
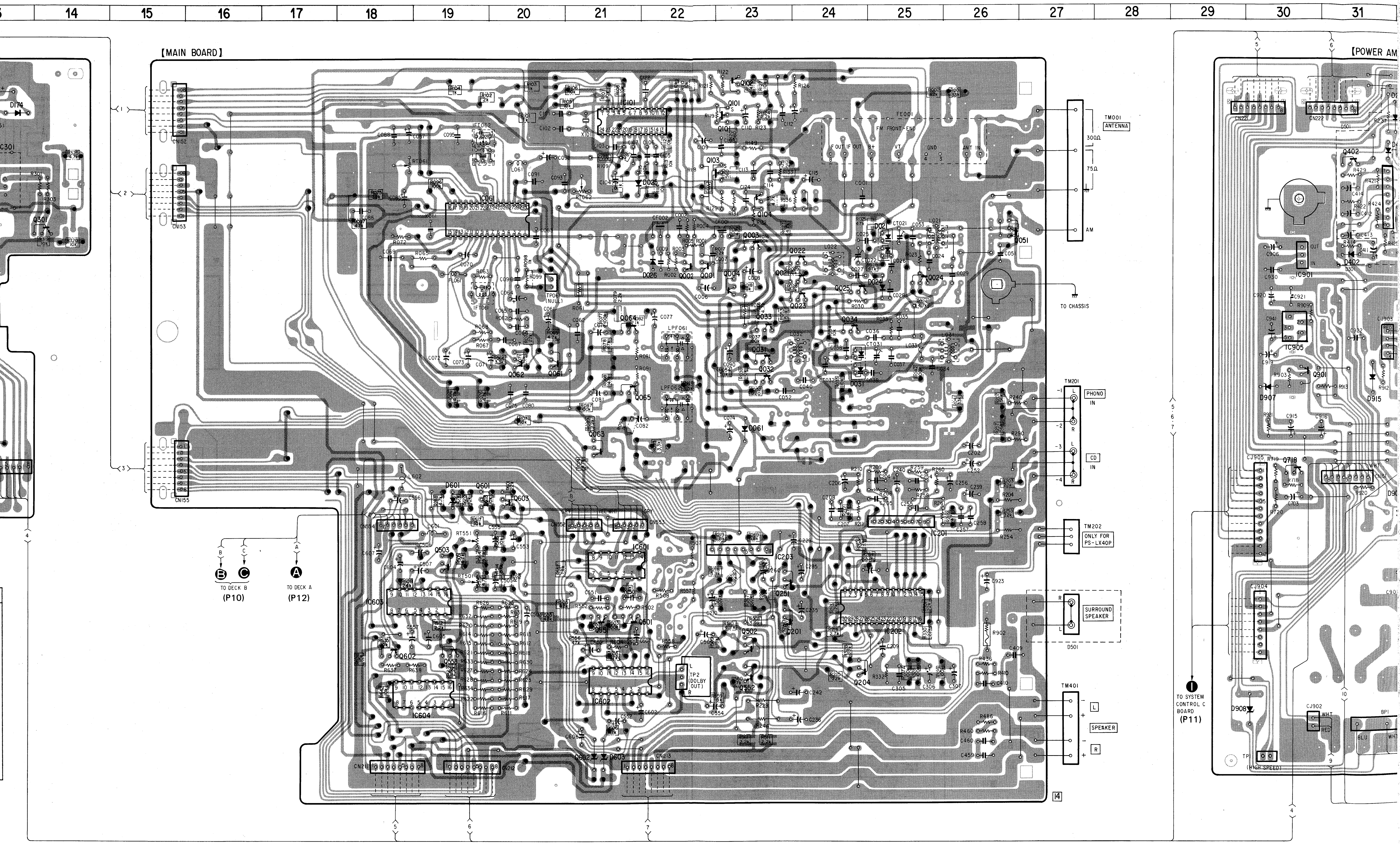
6
7
8
9
10
11
12
13
14
15
16
17
A
B
C
D
E
F
G
【CONTROL BOARD】
【MAIN BOARD】
IC153
X151
IC301
IC302
IC303
IC204
IC205
CP151
CNP152
CNP153
CNP154
CNP155
CNP151
CN152
CN153
CN155
S164
BAND SELECTOR
S167
MEMORY SCAN
S165
MEMORY
S161
S162
S166
MODE
S163
SHIFT
S160
S159
S158
S157
S156
S155
S154
S153
S152
S151
TP (TEST)
RIGHT
LEFT
RV255
RV254
RV253
RV252
RV251
RV205
RV204
RV203
RV202
RV201
10kHz
3.3kHz
1kHz
330Hz
100Hz
S201
SURROUND
OFF
ON
S202
DBFB
S301
PHONO
S302
TUNER
S303
CD
S304
TAPE
D301
D302
D303
D304
D306
Q252
Q202
Q253
Q203
Q301
Q151
Q152
L301
WHT
(220p x 8)
4
B
C
A
TO DECK B
(P10)
TO DECK A
(P12)


【VOL BOARD】
RV206
VOLUME
CN154
(MOTOR)
M
C304

- **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D021	C-25	D167	B-7	D902	F-32	IC153	B-10	IC903	G-35	Q051	C-27	Q252	F-5
D024	D-25	D174	B-13	D903	H-4	IC201	G-25	IC904	G-35	Q061	E-61	Q253	G-6
D025	C-22	D201	B-31	D904	H-4	IC202	H-25	IC905	E-30	Q062	E-20	Q301	C-14
D026	D-22	D301	F-8	D905	H-4	IC203	H-23			Q063	F-21	Q401	B-34
D031	E-24	D302	F-9	D906	H-4	IC204	E-9	Q001	D-22	Q064	E-24	Q402	B-31
D061	F-23	D303	F-10	D907	E-30	IC205	E-8	Q002	D-22	Q065	E-21	Q451	A-34
D151	B-12	D304	F-12	D908	J-30	IC301	B-13	Q003	C-23	Q101	B-23	Q501	H-21
D152	B-12	D306	F-7	D909	G-32	IC302	C-12	Q004	D-23	Q102	A-23	Q502	I-23
D153	A-11	D401	A-34	D910	G-32	IC303	D-3	Q021	D-24	Q103	B-23	Q503	H-19
D154	B-8	D402	D-31	D911	G-32	IC401	E-35	Q022	D-24	Q104	C-23	Q551	H-21
D155	B-8	D403	B-31	D912	G-32	IC402	C-31	Q023	D-24	Q151	C-13	Q552	H-23
D156	A-7	D406	C-32	D915	E-31	IC601	H-21	Q024	D-25	Q152	B-13	Q553	I-19
D157	B-8	D451	A-34	D916	G-32	IC602	I-21	Q025	D-24	Q201	H-24	Q601	G-20
D158	B-7	D601	G-19	D917	F-32	IC603	H-19	Q031	E-23	Q202	F-5	Q602	I-18
D161	B-8	D602	J-21			IC604	I-19	Q032	E-23	Q203	G-6	Q603	G-20
D165	B-7	D603	J-21	IC061	C-20	IC901	D-30	Q033	D-23	Q204	H-25	Q718	F-30
D166	B-7	D901	F-31	IC101	B-21	IC902	F-35	Q034	E-24	Q251	H-24	Q901	E-30

- ○—— : Parts extracted from the component side.
- ■ : Parts mounted on the conductor side.
- ● : Through hole.
- ▨ : Pattern on the side which is seen.
- ░ : Pattern of the rear side.
- [ ] : Resistor components printed on the rear side.


14
15
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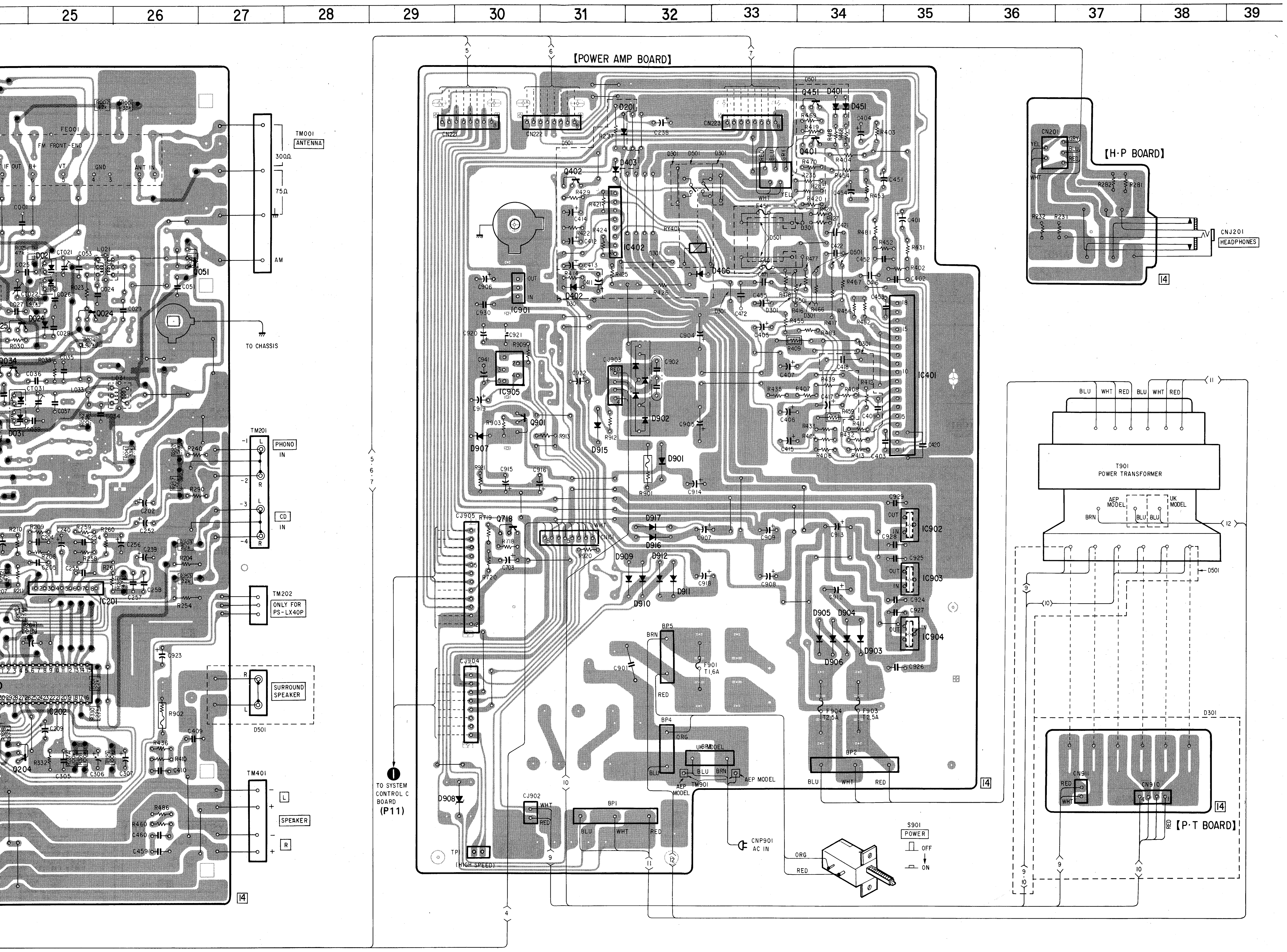
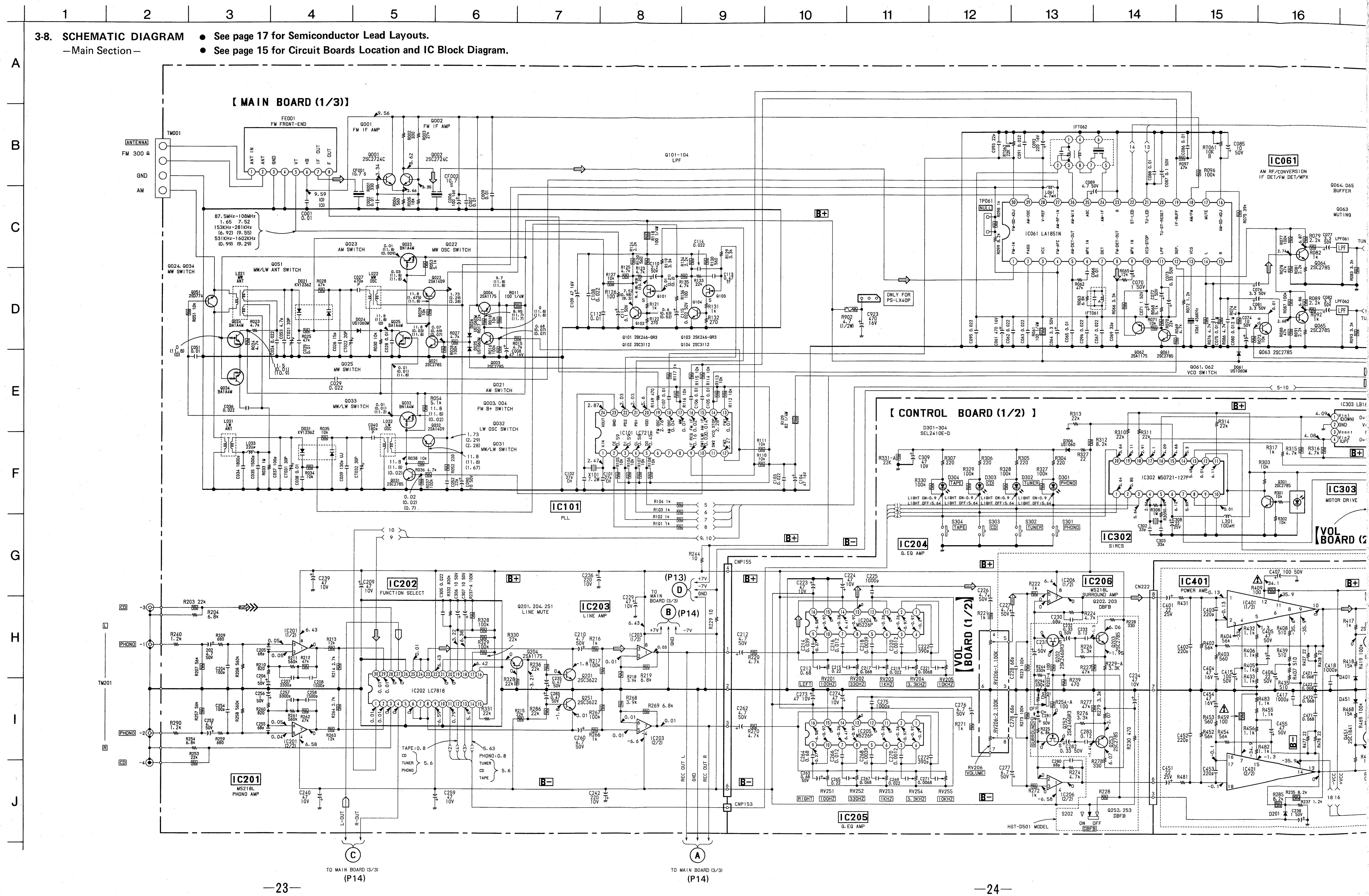
23
24
25
26
27
28
29
30
31
[MAIN BOARD]
[POWER AM
CN152
CN153
CN155
IC061
IC101
FE001
FM FRONT-END
F OUT
IF OUT
B+
VT
GND
ANT IN
TM001
ANTENNA
300Ω
75Ω
AM
TO CHASSIS
TP061 (NULL)
LPF061
LPF062
TM201
PHONO IN
CD IN
TM202
ONLY FOR PS-LX40P
SURROUND SPEAKER
D501
TM401
SPEAKER
L
R
IC601
IC602
IC603
IC604
IC201
IC202
IC203
TP2 (DOLBY OUT)
CN211
CN212
CN213
CN554
CN552
CN553
TO DECK B
TO DECK A
(P10)
(P12)
TO SYSTEM CONTROL C BOARD
(P11)
IC901
IC905
CJ905
CJ904
CJ902
TP1 (HIGH SPEED)
BLU
WHT
RED

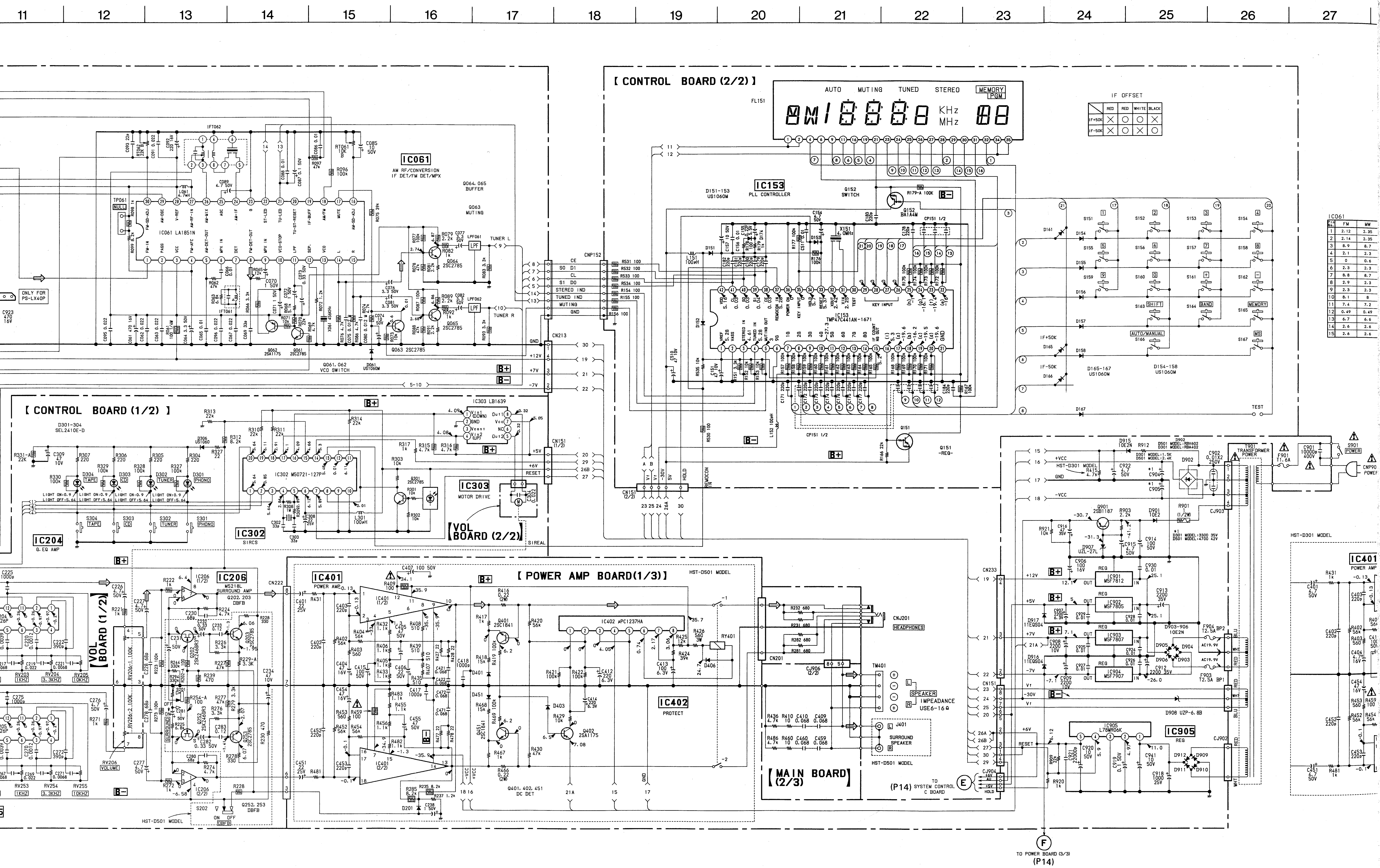

25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
【POWER AMP BOARD】
【H·P BOARD】
【P·T BOARD】
FE001
FM FRONT-END
TM001
ANTENNA
300Ω
75Ω
AM
TO CHASSIS
TM201
PHONO
IN
CD
IN
TM202
ONLY FOR
PS-LX40P
SURROUND
SPEAKER
TM401
SPEAKER
L
R
IC201
IC202
IC401
IC402
IC901
IC902
IC903
IC904
IC905
CN221
CN222
CN223
CN201
CNJ201
HEADPHONES
T901
POWER TRANSFORMER
AEP MODEL
UK MODEL
BLU
WHT
RED
BRN
ORG
YEL
GRY
F901
T1.6A
F903
T2.5A
F904
T2.5A
BP1
BP2
BP4
BP5
CJ902
CJ903
CJ904
CJ905
TM901
CNP901
AC IN
S901
POWER
OFF
ON
TP1
(HIGH SPEED)
TO SYSTEM
CONTROL C
BOARD
(P11)
CN910
CN911
D501
D301
14

3-8. SCHEMATIC DIAGRAM
—Main Section—

- See page 17 for Semiconductor Lead Layouts.
- See page 15 for Circuit Boards Location and IC Block Diagram.



[MAIN BOARD (1/3)]
ANTENNA
FM 300 Ω
GND
AM
TM001
FE001 FM FRONT-END
Q001 FM IF AMP
Q002 FM IF AMP
Q001 2SC2724C
Q002 2SC2724C
Q101-104 LPF
87.5MHz-108MHz
153KHz-281KHz
531KHz-1602KHz
Q024, Q034 MW SWITCH
Q051 MW/LW ANT SWITCH
Q023 AM SWITCH
Q022 MW OSC SWITCH
Q025 MW SWITCH
Q021 AM SWITCH
Q003, 004 FM B+ SWITCH
Q033 MW/LW OSC SWITCH
Q032 LW OSC SWITCH
Q031 MW/LW SWITCH
Q101 2SK246-GR3
Q102 2SC3112
Q103 2SK246-GR3
Q104 2SC3112
IC101 LC7218
IC101
PLL
ONLY FOR PS-LX40P
IC061 LA1851N
IC061
AM RF/CONVERSION IF DET/FM DET/MPX
Q064, 065 BUFFER
Q063 MUTING
Q063 2SC2785
Q062 2SA1175
Q061 2SC2785
Q061, 062 VCO SWITCH
D061 US1060M
LPF061
LPF062
[CONTROL BOARD (1/2)]
D301-304 SEL2410E-D
D304 TAPE
D303 CD
D302 TUNER
D301 PHONO
LIGHT ON:0.9 LIGHT OFF:5.64
S304 TAPE
S303 CD
S302 TUNER
S301 PHONO
IC302 M50721-127P
IC302
SIRCS
IC303
MOTOR DRIVE
IC303 LB16
VOL BOARD (2
IC204
G.EQ AMP
IC201
M5218L PHONO AMP
IC202
FUNCTION SELECT
IC202 LC7818
IC203
LINE AMP
Q201, 204, 251 LINE MUTE
Q204 2SA1175
Q201 2SC3622
Q251 2SC3622
CD
PHONO
L
R
TM201
TAPE:0.8
PHONO:0.8
TUNER
REC OUT L
GND
REC OUT R
CNP155
CNP153
(P13)
(P14)
TO MAIN BOARD (3/3)
RV201 100HZ
RV202 330HZ
RV203 1KHZ
RV204 3.3KHZ
RV205 10KHZ
RV251 100HZ
RV252 330HZ
RV253 1KHZ
RV254 3.3KHZ
RV255 10KHZ
LEFT
RIGHT
IC204 M5226P
IC205 M5226P
IC205
G.EQ AMP
VOL BOARD (1/2)
RV206 VOLUME
IC206
M5218L SURROUND AMP
Q202, 203 DBFB
Q252, 253 DBFB
S202
ON OFF DBFB
HST-D501 MODEL
SURROUND
CN222
IC401
POWER AMP
IC401 (1/2)
IC401 (2/2)
D201
L-OUT
R-OUT
TO MAIN BOARD (3/3)
(P14)
A
B
C
D

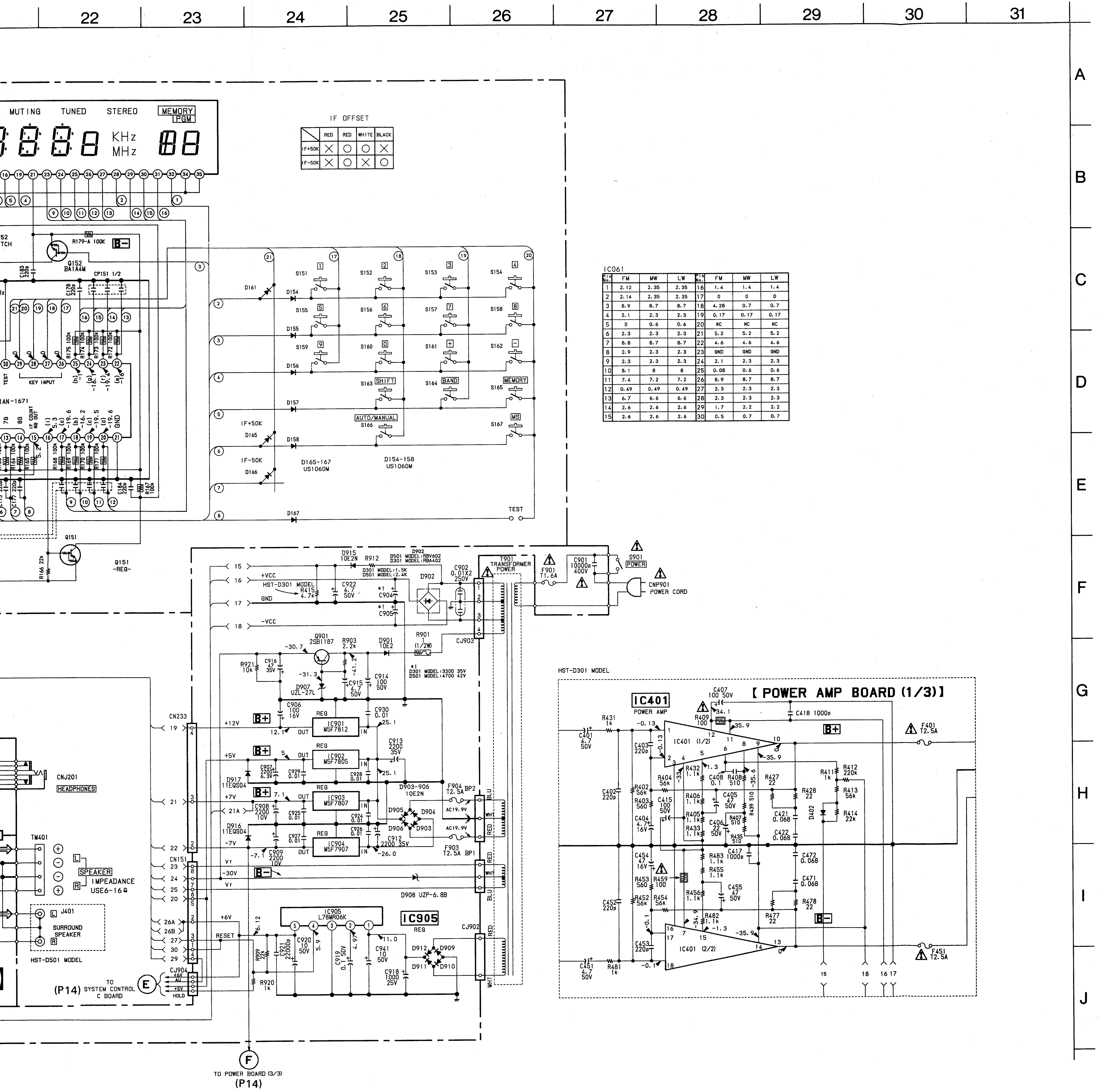

11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
【CONTROL BOARD (2/2)】
FL151
AUTO
MUTING
TUNED
STEREO
MEMORY
PGM
KHz
MHz
IC061
AM RF/CONVERSION
IF DET/FM DET/MPX
IC061 LA1851N
IFT062
IFT061
TP061
NULL
Q064, 065
BUFFER
Q063
MUTING
LPF061
LPF062
TUNER L
TUNER R
Q061, 062
VCO SWITCH
Q062 2SA1175
Q061 2SC2785
Q063 2SC2785
Q064 2SC2785
Q065 2SC2785
D061 US1060M
ONLY FOR PS-LX40P
IC153
PLL CONTROLLER
IC153 TMP47C441AN-1671
D151-153 US1060M
Q152 SWITCH
Q152 BA1A4M
X151 4.0MHz
CP151 1/2
KEY INPUT
CNP152
CE
SO DI
CL
SI DO
STEREO IND
TUNED IND
MUTING
GND
CN213
+12V
+7V
-7V
B+
B−
S151
S152
S153
S154
S155
S156
S157
S158
S159
S160
S161
S162
S163 SHIFT
S164 BAND
S165 MEMORY
S166 AUTO/MANUAL
S167 MS
D161
D154-158 US1060M
D165-167 US1060M
IF+50K
IF-50K
TEST
Q151 -REG-
【CONTROL BOARD (1/2)】
D301-304 SEL2410E-D
IC303 LB1639
IC303
MOTOR DRIVE
IC302 M50721-127P
IC302
SIRCS
IC204
G.EQ AMP
S304 TAPE
S303 CD
S302 TUNER
S301 PHONO
LIGHT ON:0.9
LIGHT OFF:5.64
【VOL BOARD (2/2)】
SIREAL
CN151 (1/2)
RESET
【VOL BOARD (1/2)】
IC206
M5218L
SURROUND AMP
Q202, 203
DBFB
Q252, 253
DBFB
S202
ON OFF
DBFB
HST-D501 MODEL
RV206 VOLUME
RV203 1KHZ
RV204 3.3KHZ
RV205 10KHZ
RV253 1KHZ
RV254 3.3KHZ
RV255 10KHZ
CN222
【POWER AMP BOARD (1/3)】
IC401
POWER AMP
IC401 (1/2)
IC401 (2/2)
IC402 μPC1237HA
IC402
PROTECT
Q401 2SC1841
Q451 2SC1841
Q402 2SA1175
Q401, 402, 451
DC DET
RY401
CNJ201
HEADPHONES
CN201
TM401
SPEAKER
IMPEADANCE
USE6-16Ω
J401
SURROUND
SPEAKER
【MAIN BOARD (2/3)】
CJ906 (2/2)
T901
TRANSFORMER
POWER
F901 T1.6A
S901 POWER
CNP901
POWER
CJ903
D902
D301 MODEL:RBV602
D501 MODEL:RBA402
D301 MODEL:1.5K
D501 MODEL:2.4K
HST-D301 MODEL
Q901 2SB1187
D907 UZL-27L
D301 MODEL:3300 35V
D501 MODEL:4700 42V
CN233
IC901 M5F7812
IC902 M5F7805
IC903 M5F7807
IC904 M5F7907
D903-906 10E2N
F904 T2.5A
F903 T2.5A
BP1
BP2
D908 UZP-6.8B
IC905 L78MR06K
IC905
REG
CJ904
CJ902
TO SYSTEM CONTROL C BOARD
(P14)
TO POWER BOARD (3/3)
(P14)
IC401
POWER AMP

IF OFFSET

	RED	RED	WHITE	BLACK
IF+50K	×	○	○	×
IF-50K	×	○	×	○

IC061

Pin No.	FM	MW
1	2.12	2.35
2	2.14	2.35
3	8.9	8.7
4	2.1	2.3
5	0	0.6
6	2.3	2.3
7	8.8	8.7
8	2.9	2.3
9	2.3	2.3
10	8.1	8
11	7.4	7.2
12	0.49	0.49
13	6.7	6.6
14	2.6	2.6
15	2.6	2.6


22
23
24
25
26
27
28
29
30
31
A
B
C
D
E
F
G
H
I
J
MUTING
TUNED
STEREO
MEMORY
PGM
KHz
MHz
Q152
BA1A4M
R179-A 100K
B−
CP151 1/2
KEY INPUT
AN-1671
Q151
Q151 -REG-
S151
S152
S153
S154
S155
S156
S157
S158
S159
S160
S161
S162
S163 SHIFT
S164 BAND
S165 MEMORY
S166 AUTO/MANUAL
S167 MS
D161
D154
D155
D156
D157
D158
D165
D166
D167
IF+50K
IF−50K
D165-167 US1060M
D154-158 US1060M
TEST
D915 10E2N
R912
D902
D501 MODEL:RBV402 D301 MODEL:RBA402
D301 MODEL:1.5K D501 MODEL:2.4K
C902 0.01X2 250V
T901 TRANSFORMER POWER
F901 T1.6A
C901 10000p 400V
S901 POWER
CNP901 POWER CORD
+VCC
HST-D301 MODEL R415 4.7k
C922 4.7 50V
GND
−VCC
Q901 2SB1187
R903 2.2k
D901 10E2
R901 1 (1/2W)
CJ903
R921 10k
C916 47 35V
D907 UZL-27L
C915 4.7 50V
C914 100 50V
D301 MODEL:3300 35V D501 MODEL:4700 42V
C906 100 16V
REG IC901 M5F7812
C930 0.01
C913 2200 35V
REG IC902 M5F7805
REG IC903 M5F7807
REG IC904 M5F7907
D917 11EQS04
D916 11EQS04
D903-906 10E2N
F904 T2.5A BP2
F903 T2.5A BP1
AC19.9V
C912 2200 35V
D908 UZP-6.8B
IC905 L78MR06K
IC905 REG
D909
D910
D911
D912
C918 1000 25V
CJ902
CN233
CN151
CJ904
CNJ201 HEADPHONES
TM401
SPEAKER IMPEDANCE USE6−16Ω
J401 SURROUND SPEAKER
HST-D501 MODEL
TO (P14) SYSTEM CONTROL C BOARD
TO POWER BOARD (3/3) (P14)
HST-D301 MODEL
IC401 POWER AMP
IC401 (1/2)
IC401 (2/2)
POWER AMP BOARD (1/3)
C407 100 50V
C418 1000p
R409 100
F401 T2.5A
F451 T2.5A
R431 1k
R481 1k
C401 4.7 50V
C451 4.7 50V
R412 220k
R413 56k
R414 22k
R411 1k
D402
B+

IF OFFSET

	RED	RED	WHITE	BLACK
IF+50K	×	○	○	×
IF−50K	×	○	×	○

IC061

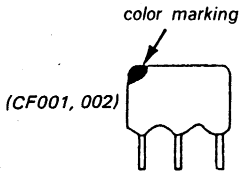
Pin No.	FM	MW	LW	Pin No.	FM	MW	LW
1	2.12	2.35	2.35	16	1.4	1.4	1.4
2	2.14	2.35	2.35	17	0	0	0
3	8.9	8.7	8.7	18	4.28	0.7	0.7
4	2.1	2.3	2.3	19	0.17	0.17	0.17
5	0	0.6	0.6	20	NC	NC	NC
6	2.3	2.3	2.3	21	5.2	5.2	5.2
7	8.8	8.7	8.7	22	4.6	4.6	4.6
8	2.9	2.3	2.3	23	GND	GND	GND
9	2.3	2.3	2.3	24	2.1	2.3	2.3
10	8.1	8	8	25	0.08	0.6	0.6
11	7.4	7.2	7.2	26	8.9	8.7	8.7
12	0.49	0.49	0.49	27	2.3	2.3	2.3
13	6.7	6.6	6.6	28	2.3	2.3	2.3
14	2.6	2.6	2.6	29	1.7	2.2	2.2
15	2.6	2.6	2.6	30	0.5	0.7	0.7

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- △ : internal component.
- ⊟ : nonflammable resistor.
- ⊟ : fusible resistor.
- ⊟ : printed resistor.
- B + : B +Line
- B − : B −Line
- ▭ : adjustment for repair.
- AC voltage readings in the bias oscillator with a VTVM.
  no mark: FM
  ❰ ❱ : REC
  ( ) : MW
  [ ] : LW
  〈 〉 : PLAY
- Voltages are taken with a VOM.
  (Input inpedance 10MΩ)
- Signal path.
  ⇨ : FM
  ▷ : PB・REC
  ⋙ : PHONO

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note on Ceramic Filter (CF001, 002) Replacement.

This set employs two ceramic filters (CF001, 002) which should have the same color marking to identify their center frequency. Therefore FM IF offset adjustment by D105, D166 mounted is necessary to match the center frequency of the ceramic filters used with FM intermediate frequency.


color marking
(CF001, 002)

○ : Mounted
× : not Mounted

Ceramic filter		Mount		FM intermediate fequency (MHz)
Color mark	Center fre-quency (MHz)	IF−50K D166	IF + 50K D165	
White	10.750	×	○	10.750
Red	10.700	×	×	10.700
Black	10.650	○	×	10.650

FM intermediate frequency is determined by the three types as shown above. Ceramic filters of same center frequency,i., of same color coding should be used for CF001 and CF002.

When replacing the ceramic filters, perform the FM Discriminator Adjustment.

SECTION 4
EXPLODED VIEWS

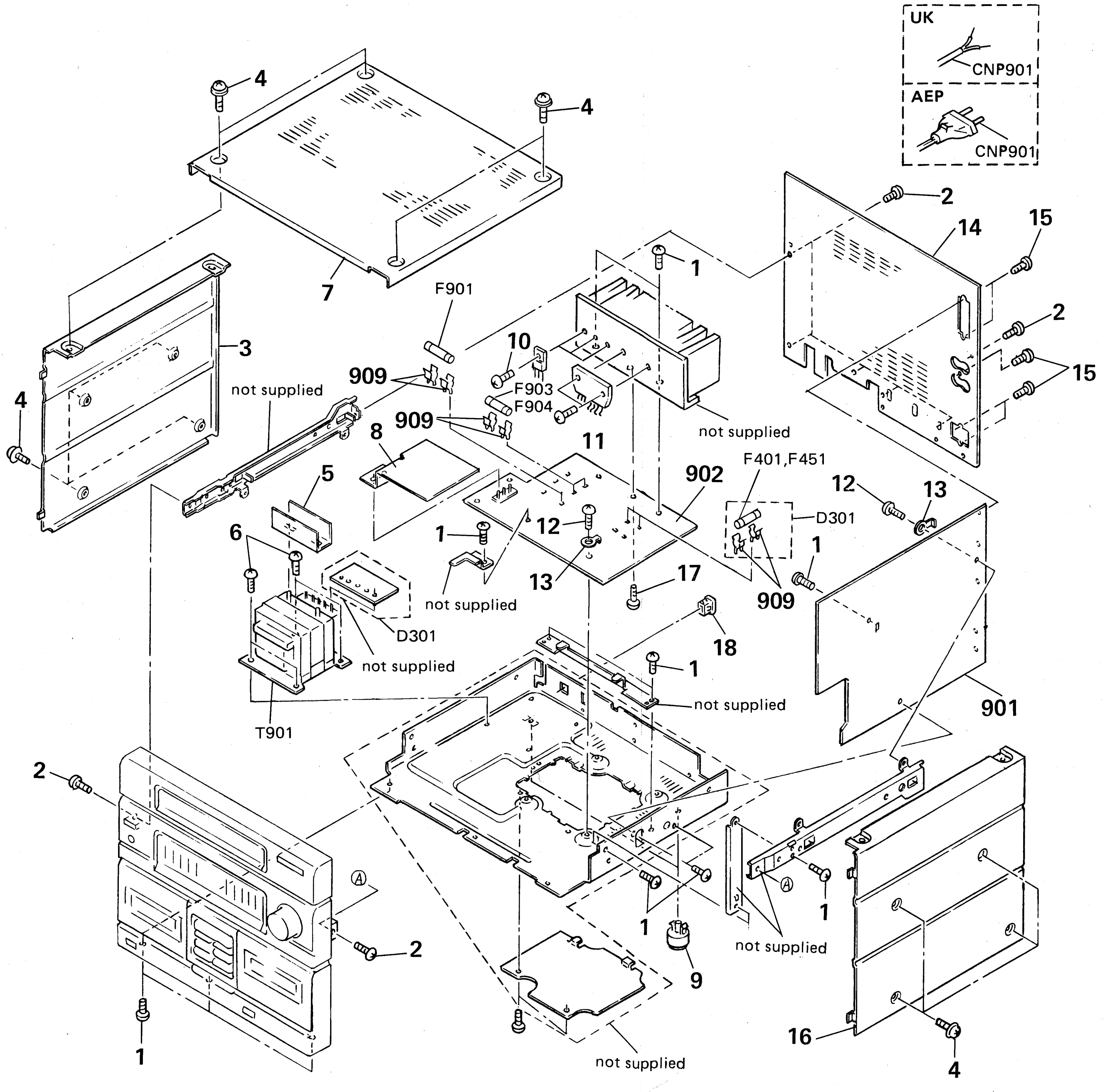
NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts Example:

  (RED) . . . KNOB, BALANCE (WHITE)
  ↑ ↑
  Cabinet's Color Parts Color

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

1. CASE

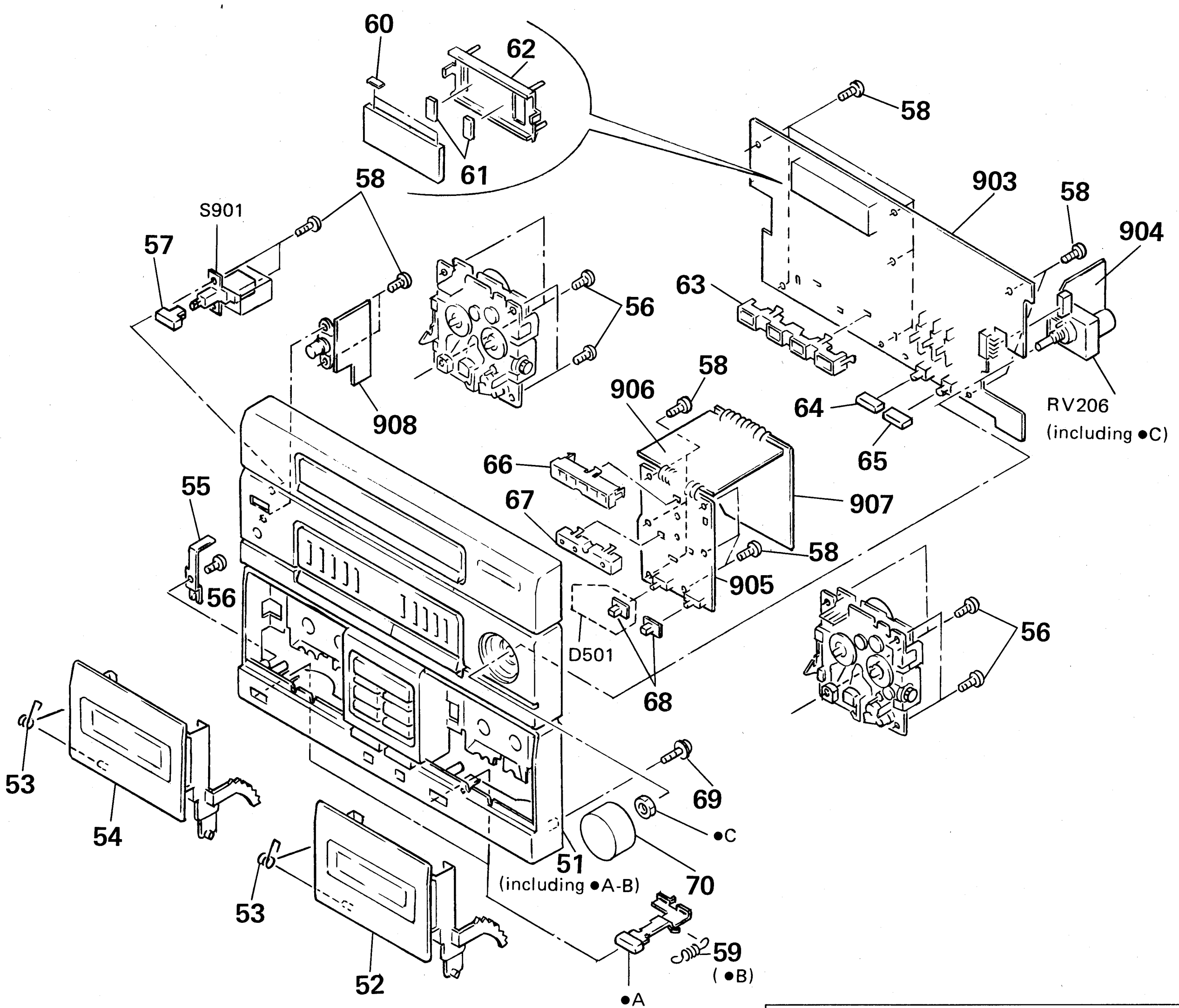

UK
CNP901
AEP
CNP901
4
4
7
3
4
not supplied
F901
909
909
10
F903
F904
8
5
6
1
1
11
not supplied
902
12
13
17
not supplied
D301
not supplied
T901
F401,F451
D301
1
909
12
13
2
14
15
2
15
18
1
not supplied
901
2
2
1
1
9
not supplied
1
not supplied
16
4
Ⓐ
Ⓐ

No.	Part No.	Description	Remarks
1	7-682-548-04	SCREW +BVTT 3X8 (S)	
2	2-383-566-00	SCREW	
3	4-929-950-01	CASE (LEFT)	
4	4-929-973-01	SCREW (CASE, 3 POINT)	
5	*4-930-709-01	INSULATOR (TR)	
6	7-682-561-04	SCREW +BVTT 4X8 (S)	
7	4-923-182-51	CASE (T)	
8	*4-929-965-02	INSULATOR (AC)	
9	X-4864-303-0	FOOT ASSY	
10	7-682-648-09	SCREW +PSW 3X8	
11	4-928-635-11	SCREW, +BV (2.6X16) TAPPING	
12	3-703-685-21	SCREW (+BV 3X8)	
13	*3-346-266-12	PLATE, GROUND	
14	*4-929-905-01	(D501CD).....PANEL, BACK	
	*4-929-905-61	(D501:AEP)...PANEL, BACK	
	*4-929-905-71	(D501CDM)....PANEL, BACK	
	*4-929-944-01	(D301:UK)....PANEL, BACK	
	*4-929-944-61	(D301:AEP)...PANEL, BACK	
	*4-929-944-71	(D301CD).....PANEL, BACK	
15	7-685-648-79	SCREW +BVTP 3X12 TYPE2 N-S	
16	4-929-951-01	CASE (RIGHT)	
17	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
18	*3-703-244-00	BUSHING (2104), CORD	

No.	Part No.	Description	Remarks
901	*A-4333-438-A	(D501:UK)....MOUNTED PCB, MAIN	
	*A-4333-444-A	(D501:AEP)...MOUNTED PCB, MAIN	
	*A-4410-936-A	(D301:UK)....MOUNTED PCB, MAIN	
	*A-4410-937-A	(D301:AEP)...MOUNTED PCB, MAIN	
902	*A-4333-443-A	(D501:UK)...MOUNTED PCB, POWER AMPLIFIER	
	*A-4333-445-A	(D501:AEP)..MOUNTED PCB, POWER AMPLIFIER	
	*A-4388-817-A	(D301:UK)...MOUNTED PCB, POWER AMPLIFIER	
	*A-4388-818-A	(D301:AEP)..MOUNTED PCB, POWER AMPLIFIER	
909	1-533-183-11	HOLDER, FUSE	
⚠CNP901.	1-556-035-00	(UK)....CORD, POWER	
⚠CNP901.	1-558-944-11	(AEP)...CORD, POWER	
F401	⚠.1-532-286-00	(D301)...FUSE, TIME-LAG (T2.5A)	
F451	⚠.1-532-286-00	(D301)...FUSE, TIME-LAG (T2.5A)	
F901	⚠.1-532-259-00	FUSE, TIME-LAG (T1.6A)	
F903	⚠.1-532-286-00	FUSE, TIME-LAG (T2.5A)	
F904	⚠.1-532-286-00	FUSE, TIME-LAG (T2.5A)	
T901	⚠.1-449-545-12	(D301:AEP)...TRANSFORMER, POWER	
T901	⚠.1-449-546-13	(D301:UK)....TRANSFORMER, POWER	
T901	⚠.1-449-648-12	(D501:UK)....TRANSFORMER, POWER	
T901	⚠.1-449-649-12	(D501:AEP)...TRANSFORMER, POWER	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

2. FRONT PANEL, CASSETTE LID



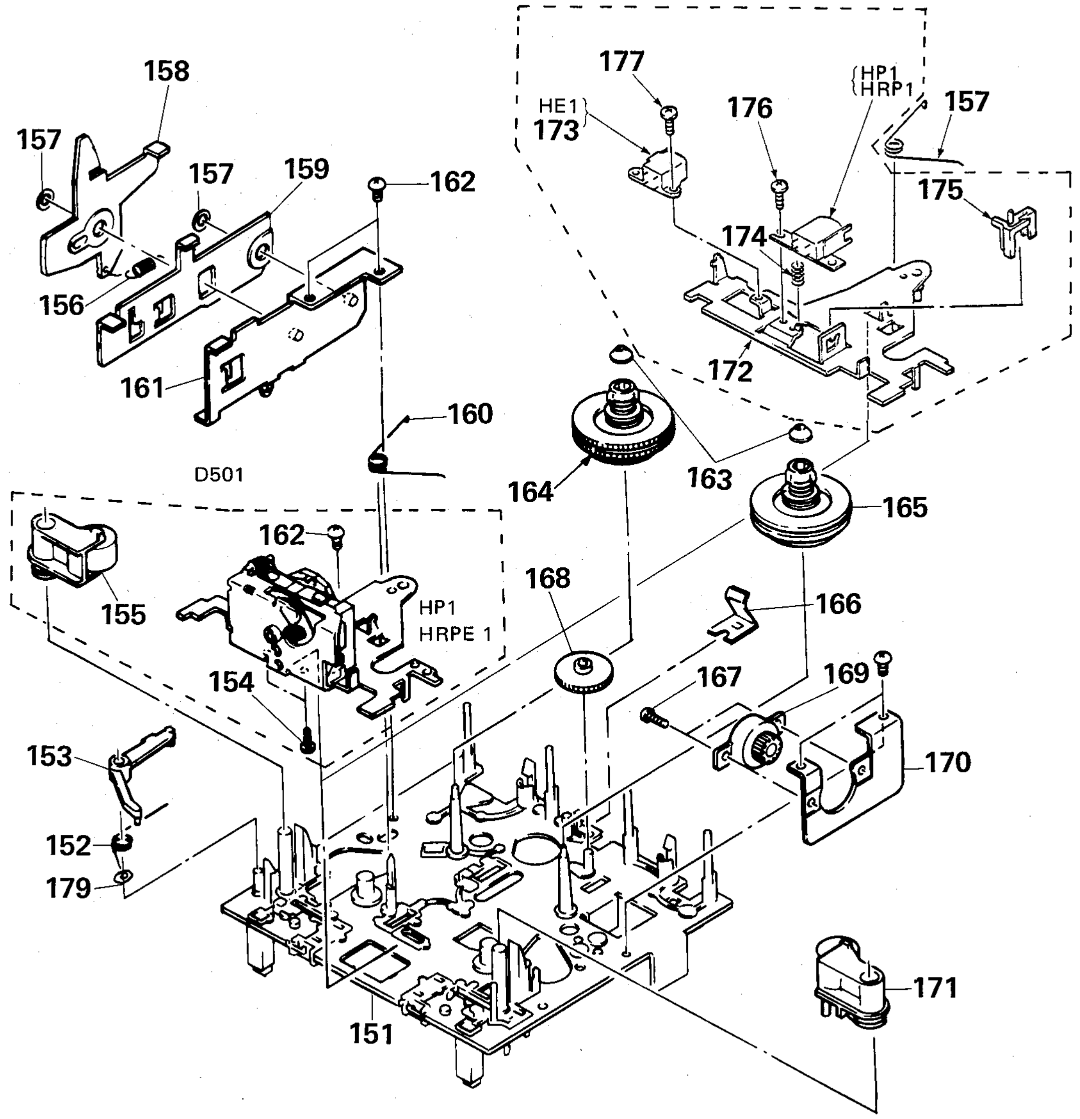
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

No.	Part No.	Description	Remarks
51	X-4929-917-1	(D501)...PANEL ASSY, FRONT	
	X-4929-922-1	(D301)...PANEL ASSY, FRONT	
52	X-4929-915-1	(D501)...HOLDER (B) ASSY, CASSETTE	
	X-4929-920-1	(D301)...HOLDER (B) ASSY, CASSETTE	
53	4-924-506-01	SPRING (LOADING)	
54	X-4929-914-1	(D501)...HOLDER (A) ASSY, CASSETTE	
	X-4929-919-1	(D301)...HOLDER (A) ASSY, CASSETTE	
55	*4-929-959-01	BRACKET (HOLDER H)	
56	7-685-134-19	SCREW +P 2.6X8 TYPE2 NON-SLIT	
57	4-929-933-01	BUTTON (POP)	
58	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
59	4-885-182-11	SPRING, TENSION	
60	9-911-863-XX	SPACER	
61	*4-921-941-21	CUSHION (FL)	
62	*4-923-103-01	HOLDER, FL TUBE	

No.	Part No.	Description	Remarks
63	*4-929-936-01	HOLDER (FU), LED	
64	4-929-929-21	BUTTON (S. D)	
65	4-929-929-51	BUTTON (S. D)	
66	*4-929-926-01	HOLDER (D. R), LED	
67	*4-929-928-01	HOLDER (CA), LED	
68	4-922-518-01	KNOB (TIMER)	
69	3-341-549-21	SCREW(2.6X12)(DIA.7.5), +PTP WH	
70	4-929-935-01	KNOB (VO)	
903	*A-4333-439-A	(D501)...MOUNTED PCB, CONTROL	
	*A-4375-436-A	(D301)...MOUNTED PCB, CONTROL	
904	*1-629-923-11	PC BOARD, VOL	
905	*1-629-859-11	PC BOARD, SYSTEM CONTROL (A)	
906	*1-629-860-11	PC BOARD, SYSTEM CONTROL (B)	
907	*1-629-861-11	PC BOARD, SYSTEM CONTROL (C)	
908	*1-629-858-11	PC BOARD, H.P	
S901	⚠.1-553-318-31	SWITCH, PUSH (AC POWER)(1 KEY)(POWER)	

3. Tape Transport MECHANISM (1)

D301, DECK A: TCM-170VA1 D501, DECK A: TCM-170RA1
D301, DECK B: TCM-170VB3 D501, DECK B: TCM-170RB1



No.	Part No.	Description	Remarks
151	*X-3343-418-1	(D501)...CHASSIS ASSY, MECHANICAL	
	*X-3343-420-2	(D301)...CHASSIS ASSY, MECHANICAL	
152	3-343-477-01	SPRING, TORSION (EJECT SAFTY)	
153	*3-343-476-01	LEVER (EJECT SAFETY LEVER)	
154	7-685-102-19	SCREW +P 2X4 NON-SLIT TYPE 2	
155	X-3343-403-1	(D501)...LEVER (PINCH LEVER REV) ASSY	
156	3-343-474-01	SPRING, TENSION	
157	3-558-708-21	WASHER, STOPPER	
158	*4-930-729-01	LEVER (LOCK LEVER)	
159	*3-343-450-01	LEVER (EJECT LEVER)	
160	3-343-401-01	SPRING, TORSION	
161	*X-3343-410-1	BRACKET (EJECT) ASSY	
162	7-621-773-86	SCREW +BVTT 2.6X4 (S)	
163	3-343-439-01	CAP (REEL TABLE)	
164	X-3343-415-1	TABEL (REV) ASSY, REEL	
165	X-3343-401-1	TABEL ASSY, REEL	
166	3-343-420-01	SPRING, LEAF	
167	7-621-255-15	SCREW +PTT 2X3 (S)	
168	3-343-411-01	GEAR (FF GEAR)	
169	3-319-224-31	DAMPER, SMALL	
171	X-3343-402-1	LEVER (PINCH LEVER FWD) ASSY	
172	*X-3343-422-1	(D301)...SLIDER (HEAD CHASSIS ONE) ASSY	
173	3-319-716-01	(D301)...GUIDE, TAPE	
174	3-343-484-01	(D301)...SPRING, COMPRESSION	
175	3-343-485-02	(D301)...HOLDER (HEAD LEAD)	
176	3-701-465-11	(D301)...SCREW, LOCK SWRM 4+, CZN-N4+	
177	7-621-772-38	(D301)...SCREW +B 2X6	
178	7-621-770-87	SCREW +BVTT 2.6X5 (S)	
179	3-343-487-01	WASHER	
HE1	1-543-535-11	(D301:DECK B)...HEAD, MAGNETIC (ERASE)	
HP1	A-2108-129-A	(D501:DECK A)...CHASSIS ASSY, HEAD	
HP1	1-543-536-11	(D301:DECK A)...HEAD, MAGNETIC(PLAY BACK)	
HRP1	1-543-537-11	(D301:DECK B)...HEAD, MAGNETIC (REC/PB)	
HRP1	A-2108-130-A	(D501:DECK B)...CHASSIS ASSY, HEAD	

Ref.No.	Part No.	Description				
R406	1-247-832-11	CARBON	1.1K	5%	1/4W	
R407	1-249-442-11	CARBON	510	5%	1/4W	
R408	1-249-442-11	CARBON	510	5%	1/4W	
R409 ⚠	1-247-700-11	CARBON	100	5%	1/4W	F
R410	1-249-389-11	CARBON	4.7	5%	1/4W	
R411	1-249-417-11	(D301)...CARBON	1K	5%	1/4W	
R412	1-247-881-00	(D301)...CARBON	120K	5%	1/4W	
R413	1-249-438-11	(D301)...CARBON	56K	5%	1/4W	
R414	1-249-431-11	(D301)...CARBON	15K	5%	1/4W	
R416	1-217-151-00	(D501)...METAL	0.22	1%	2W	
R417	1-249-417-11	(D501)...CARBON	1K	5%	1/4W	
R418	1-249-417-11	(D501)...CARBON	1K	5%	1/4W	
R419	1-249-441-11	(D501)...CARBON	100K	5%	1/4W	
R420	1-249-438-11	(D501)...CARBON	56K	5%	1/4W	
R421	1-249-441-11	(D501)...CARBON	100K	5%	1/4W	
R422	1-249-441-11	(D501)...CARBON	100K	5%	1/4W	
R424	1-249-436-11	(D501)...CARBON	39K	5%	1/4W	
R425	1-249-430-11	(D501)...CARBON	12K	5%	1/4W	
R426	1-216-479-11	(D501)...METAL	560		3W	
R427	1-247-692-11	(D301)...CARBON	22	5%	1/4W	
R428	1-247-692-11	(D301)...CARBON	22	5%	1/4W	
R429	1-249-393-11	(D501)...CARBON	10K	5%	1/4W	
R431	1-249-417-11	CARBON	1K	5%	1/4W	
R432	1-247-832-11	CARBON	1.1K	5%	1/4W	
R433	1-247-832-11	CARBON	1.1K	5%	1/4W	
R435	1-249-442-11	CARBON	510	5%	1/4W	
R436	1-249-389-11	CARBON	4.7	5%	1/4W	
R439	1-249-442-11	CARBON	510	5%	1/4W	
R452	1-249-438-11	CARBON	56K	5%	1/4W	
R453	1-249-414-11	CARBON	560	5%	1/4W	
R454	1-249-438-11	CARBON	56K	5%	1/4W	
R455	1-247-832-11	CARBON	1.1K	5%	1/4W	
R456	1-247-832-11	CARBON	1.1K	5%	1/4W	
R459 ⚠	1-247-700-11	CARBON	100	5%	1/4W	F
R460	1-249-389-11	CARBON	4.7	5%	1/4W	
R466	1-217-151-00	(D501)...METAL	0.22	1%	2W	
R467	1-249-417-11	(D501)...CARBON	1K	5%	1/4W	
R468	1-249-431-11	(D501)...CARBON	15K	5%	1/4W	
R469	1-249-441-11	(D501)...CARBON	100K	5%	1/4W	
R470	1-249-437-11	(D501)...CARBON	47K	5%	1/4W	
R477	1-247-692-11	(D301)...CARBON	22	5%	1/4W	
R478	1-247-692-11	(D301)...CARBON	22	5%	1/4W	
R481	1-249-417-11	CARBON	1K	5%	1/4W	
R482	1-247-832-11	CARBON	1.1K	5%	1/4W	
R483	1-247-832-11	CARBON	1.1K	5%	1/4W	
R486	1-249-389-11	CARBON	4.7	5%	1/4W	
R502	1-249-422-11	CARBON	2.7K	5%	1/4W	
R507	1-249-437-11	CARBON	47K	5%	1/4W	
R508	1-249-422-11	CARBON	2.7K	5%	1/4W	
R510	1-249-430-11	CARBON	12K	5%	1/4W	
R552	1-249-422-11	CARBON	2.7K	5%	1/4W	
R557	1-249-437-11	CARBON	47K	5%	1/4W	
R558	1-249-422-11	CARBON	2.7K	5%	1/4W	
R604	1-215-460-00	METAL	43K	1%	1/6W	
R611	1-249-437-11	CARBON	47K	5%	1/4W	
R612	1-249-435-11	CARBON	33K	5%	1/4W	
R613	1-247-868-11	(D501)...CARBON	36K	5%	1/4W	
R613	1-215-464-00	(D301)...CARBON	62K	5%	1/4W	
R614	1-247-878-00	(D501)...CARBON	91K	5%	1/4W	
R614	1-247-883-00	(D301)...CARBON	150K	5%	1/4W	
R615	1-247-881-00	(D501)...CARBON	120K	5%	1/4W	
R615	1-249-441-11	(D301)...CARBON	100K	5%	1/4W	
R616	1-249-437-11	(D501)...CARBON	47K	5%	1/4W	
R616	1-247-878-00	(D301)...CARBON	91K	5%	1/4W	
R617	1-247-862-11	(D501)...CARBON	20K	5%	1/4W	
R617	1-249-434-11	(D301)...CARBON	27K	5%	1/4W	
R618	1-247-868-11	(D501)...CARBON	36K	5%	1/4W	
R618	1-249-435-11	(D301)...CARBON	33K	5%	1/4W	
R619	1-249-436-11	(D501)...CARBON	39K	5%	1/4W	
R619	1-249-439-11	(D301)...CARBON	68K	5%	1/4W	
R620	1-247-876-11	(D501)...CARBON	75K	5%	1/4W	
R620	1-249-441-11	(D301)...CARBON	100K	5%	1/4W	
R621	1-247-868-11	CARBON	36K	5%	1/4W	
R622	1-247-878-00	(D501)...CARBON	91K	5%	1/4W	
R622	1-247-876-11	(D301)...CARBON	75K	5%	1/4W	
R623	1-247-876-11	(D501)...CARBON	75K	5%	1/4W	
R623	1-249-439-11	(D301)...CARBON	68K	5%	1/4W	
R624	1-249-437-11	(D501)...CARBON	47K	5%	1/4W	
R624	1-249-436-11	(D301)...CARBON	39K	5%	1/4W	
R625	1-247-868-11	(D501)...CARBON	36K	5%	1/4W	
R625	1-249-441-11	(D301)...CARBON	100K	5%	1/4W	
R626	1-247-883-00	(D301)...CARBON	150K	5%	1/4W	
R626	1-247-878-00	(D501)...CARBON	91K	5%	1/4W	
R627	1-247-881-00	(D501)...CARBON	120K	5%	1/4W	
R627	1-247-876-11	(D301)...CARBON	75K	5%	1/4W	
R628	1-247-876-11	(D501)...CARBON	75K	5%	1/4W	
R628	1-247-891-00	(D301)...CARBON	330K	5%	1/4W	
R629	1-247-868-11	(D501)...CARBON	36K	5%	1/4W	
R629	1-215-460-00	(D301)...CARBON	43K	5%	1/4W	
R630	1-249-438-11	(D501)...CARBON	56K	5%	1/4W	
R630	1-215-462-00	(D301)...CARBON	51K	5%	1/4W	
R631	1-249-433-11	(D501)...CARBON	22K	5%	1/4W	
R631	1-249-439-11	(D301)...CARBON	68K	5%	1/4W	
R632	1-249-434-11	(D501)...CARBON	27K	5%	1/4W	
R632	1-215-464-00	(D301)...CARBON	62K	5%	1/4W	
R633	1-249-440-11	(D501)...CARBON	82K	5%	1/4W	
R633	1-249-437-11	(D301)...CARBON	47K	5%	1/4W	
R634	1-249-440-11	CARBON	82K	5%	1/4W	
R637	1-249-415-11	(D501)...CARBON	680	5%	1/4W	
R637	1-249-423-11	(D301)...CARBON	3.3K	5%	1/4W	
R638	1-249-418-11	(D501)...CARBON	1.2K	5%	1/4W	
R638	1-247-848-11	(D301)...CARBON	5.1K	5%	1/4W	
R704	1-249-417-11	CARBON	1K	5%	1/4W	
R705	1-249-421-11	CARBON	2.2K	5%	1/4W	
R713	1-249-417-11	CARBON	1K	5%	1/4W	
R715	1-249-421-11	CARBON	2.2K	5%	1/4W	
R718	1-249-429-11	CARBON	10K	5%	1/4W	
R719	1-249-429-11	CARBON	10K	5%	1/4W	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description				
Q725	8-729-173-38	TRANSISTOR 2SA733				
Q726	8-729-173-38	(D501)...TRANSISTOR 2SA733				
Q727	8-729-173-38	(D501)...TRANSISTOR 2SA733				
Q728	8-729-173-38	TRANSISTOR 2SA733				
Q729	8-729-173-38	(D501)...TRANSISTOR 2SA733				
Q730	8-729-173-38	(D501)...TRANSISTOR 2SA733				
Q731	8-729-173-38	TRANSISTOR 2SA733				
Q732	8-729-173-38	TRANSISTOR 2SA733				
Q733	8-729-173-38	TRANSISTOR 2SA733				
Q734	8-729-173-38	TRANSISTOR 2SA733				
Q901	8-729-920-97	TRANSISTOR 2SB1187-EF				
R11	1-247-834-11	(DECK B)...CARBON	1.3K	5%	1/4W	
R12	1-249-414-11	(DECK B)...CARBON	560	5%	1/4W	
R13	1-247-818-11	(D501:DECK B)...CARBON	300	5%	1/4W	
R14	1-249-408-11	CARBON	180	5%	1/4W	
R17	1-249-437-11	CARBON	47K	5%	1/4W	
R18	1-249-437-11	CARBON	47K	5%	1/4W	
R41	1-247-881-00	(EXCEPT D301:DECK B) ...CARBON	120K	5%	1/4W	
R41	1-247-889-00	(D301:DECK B)...CARBON	270K	5%	1/4W	
R42	1-249-405-11	CARBON	100	5%	1/4W	
R43	1-247-882-11	CARBON	130K	5%	1/4W	
R44	1-249-426-11	CARBON	5.6K	5%	1/4W	
R45	1-249-430-11	(DECK B)...CARBON	12K	5%	1/4W	
R61	1-247-881-00	(EXCEPT D301:DECK B) ...CARBON	120K	5%	1/4W	
R61	1-247-889-00	(D301:DECK B)...CARBON	270K	5%	1/4W	
R62	1-249-405-11	CARBON	100	5%	1/4W	
R63	1-247-882-11	CARBON	130K	5%	1/4W	
R64	1-249-426-11	CARBON	5.6K	5%	1/4W	
R65	1-249-430-11	(DECK B)...CARBON	12K	5%	1/4W	
R81	1-249-409-11	CARBON	220	5%	1/4W	
R82	1-249-409-11	CARBON	220	5%	1/4W	
R83	1-249-429-11	(DECK B)...CARBON	10K	5%	1/4W	
R84	1-212-853-00	(D501:DECK B)...FUSIBLE	6.8	5%	1/4W	F
R84	1-212-851-00	(D301:DECK B)...FUSIBLE	5.6	5%	1/4W	F
R85	1-249-434-11	(D501:DECK B)...CARBON	27K	5%	1/4W	
R85	1-249-435-11	(D301:DECK B)...CARBON	33K	5%	1/4W	
R86	1-249-434-11	(D501:DECK B)...CARBON	27K	5%	1/4W	
R86	1-249-435-11	(D301:DECK B)...CARBON	33K	5%	1/4W	
R001	1-249-411-11	CARBON	330	5%	1/4W	
R002	1-249-411-11	CARBON	330	5%	1/4W	
R003	1-249-434-11	CARBON	27K	5%	1/4W	
R004	1-249-414-11	CARBON	560	5%	1/4W	
R005	1-249-432-11	CARBON	18K	5%	1/4W	
R011 ⚠	1-247-700-11	CARBON	100	5%	1/4W	F
R023	1-249-425-11	CARBON	4.7K	5%	1/4W	
R030	1-249-429-11	CARBON	10K	5%	1/4W	
R033	1-247-903-00	CARBON	1M	5%	1/4W	
R061 ⚠	1-247-700-11	CARBON	100	5%	1/4W	F
R062	1-249-437-11	CARBON	47K	5%	1/4W	
R063	1-249-427-11	CARBON	6.8K	5%	1/4W	
R065	1-249-430-11	CARBON	12K	5%	1/4W	
R067	1-247-903-00	CARBON	1M	5%	1/4W	
R068	1-247-848-11	CARBON	5.1K	5%	1/4W	
R072	1-249-418-11	CARBON	1.2K	5%	1/4W	
R081	1-249-417-11	CARBON	2.2K	5%	1/4W	
R099	1-249-428-11	CARBON	8.2K	5%	1/4W	

Ref.No.	Part No.	Description				
R109 ⚠	1-247-699-11	CARBON	82	5%	1/4W	F
R118 ⚠	1-247-700-11	CARBON	100	5%	1/4W	F
R119	1-249-423-11	CARBON	3.3K	5%	1/4W	
R123	1-249-425-11	CARBON	4.7K	5%	1/4W	
R126	1-249-405-11	CARBON	100	5%	1/4W	
R129	1-249-423-11	CARBON	3.3K	5%	1/4W	
R133	1-249-433-11	CARBON	22K	5%	1/4W	
R136	1-249-405-11	CARBON	100	5%	1/4W	
R149	1-249-413-11	CARBON	470	5%	1/4W	
R166	1-249-433-11	CARBON	22K	5%	1/4W	
R178	1-249-405-11	CARBON	100	5%	1/4W	
R179	1-249-417-11	CARBON	1K	5%	1/4W	
R204	1-249-427-11	CARBON	6.8K	5%	1/4W	
R208	1-249-438-11	CARBON	560K	5%	1/4W	
R209	1-249-415-11	CARBON	680	5%	1/4W	
R210	1-249-416-11	CARBON	820	5%	1/4W	
R211	1-249-438-11	CARBON	560K	5%	1/4W	
R224	1-249-425-11	CARBON	4.7K	5%	1/4W	
R225	1-249-427-11	(D501)...CARBON	6.8K	5%	1/4W	
R226	1-249-423-11	(D501)...CARBON	3.3K	5%	1/4W	
R227	1-249-437-11	(D501)...CARBON	47K	5%	1/4W	
R228	1-249-411-11	(D501)...CARBON	330	5%	1/4W	
R229-A	1-249-423-11	(D501)...CARBON	3.3K	5%	1/4W	
R229	1-249-688-11	CARBON	10	5%	1/4W	
R230	1-249-413-11	(D501)...CARBON	470	5%	1/4W	
R235 ⚠	1-249-428-11	(D501)...CARBON	8.2K	5%	1/4W	F
R237	1-249-418-11	(D501)...CARBON	1.2K	5%	1/4W	
R240	1-249-418-11	CARBON	1.2K	5%	1/4W	
R244	1-247-688-11	CARBON	10	5%	1/4W	
R244-A	1-247-891-00	(D501)...CARBON	330K	5%	1/4W	
R254	1-249-427-11	CARBON	6.8K	5%	1/4W	
R258	1-249-438-11	CARBON	560K	5%	1/4W	
R259	1-249-415-11	CARBON	680	5%	1/4W	
R260	1-249-416-11	CARBON	820	5%	1/4W	
R261	1-249-438-11	CARBON	560K	5%	1/4W	
R274	1-249-425-11	CARBON	4.7K	5%	1/4W	
R276	1-249-423-11	(D501)...CARBON	3.3K	5%	1/4W	
R277	1-249-437-11	(D501)...CARBON	47K	5%	1/4W	
R278	1-249-411-11	(D501)...CARBON	330	5%	1/4W	
R279	1-249-423-11	(D501)...CARBON	3.3K	5%	1/4W	
R285	1-249-428-11	(D501)...CARBON	8.2K	5%	1/4W	F
R290	1-249-418-11	CARBON	1.2K	5%	1/4W	
R294	1-247-891-00	(D501)...CARBON	330K	5%	1/4W	
R301	1-249-429-11	CARBON	10K	5%	1/4W	
R303	1-249-429-11	CARBON	10K	5%	1/4W	
R304	1-249-409-11	CARBON	220	5%	1/4W	
R305	1-249-409-11	CARBON	220	5%	1/4W	
R306	1-249-409-11	CARBON	220	5%	1/4W	
R307	1-249-409-11	CARBON	220	5%	1/4W	
R308	1-247-903-00	CARBON	1M	5%	1/4W	
R309	1-249-413-11	CARBON	470	5%	1/4W	
R317	1-249-417-11	CARBON	1K	5%	1/4W	
R332	1-247-901-11	CARBON	820K	5%	1/4W	
R402	1-249-438-11	CARBON	56K	5%	1/4W	
R403	1-249-414-11	CARBON	560	5%	1/4W	
R404	1-249-438-11	CARBON	56K	5%	1/4W	
R405	1-247-832-11	CARBON	1.1K	5%	1/4W	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description
HRP1	1-543-537-11	(D301:DECK B)...HEAD, MAGNETIC (REC/PB)
HRP1	A-2108-130-A	(D501:DECK B)...CHASSIS ASSY, HEAD
IC81	8-759-111-44	IC UPC4570C-1
IC061	8-759-821-45	IC LA1851N
IC101	8-759-820-91	IC LC7218
IC153	8-759-231-89	IC TMP47C441AN-1671
IC201	8-759-600-02	IC M5218L
IC202	8-759-802-52	IC LC7818
IC203	8-759-600-02	IC M5218L
IC204	8-759-602-04	IC M5226P
IC205	8-759-602-04	IC M5226P
IC206	8-759-600-02	IC M5218L
IC301	8-749-920-03	IC GP1U52
IC302	8-759-632-31	IC M50721-127P
IC303	8-759-820-62	IC LB1639
IC401	8-749-920-13	(D301)...IC STK4132II
IC401	8-749-941-52	(D501)...IC STK4152II
IC402	8-759-111-68	(D501)...IC UPC1237HA
IC601	8-759-601-43	IC M4066BP
IC602	8-752-031-67	IC CXA1100P
IC603	8-752-033-61	IC CXA1198AP
IC604	8-759-240-52	IC TC4052BP
IC701	8-759-633-21	IC M50964-211
IC901	8-759-604-33	IC M5F7812
IC902	8-759-604-29	IC M5F7805
IC903	8-759-604-86	IC M5F7807
IC904	8-759-604-90	IC M5F7907
IC905	8-759-820-13	IC L78MR006
IFT061	1-404-807-11	TRANSFORMER, DISCRIMINATOR
IFT062	1-404-713-11	TRANSFORMER, IF
J401	1-507-997-11	(D501)...JACK, PIN 2P (SURROUND SPEAKER)
L41	1-410-780-11	(DECK B)...INDUCTOR 27MMH
L61	1-410-780-11	(DECK B)...INDUCTOR 27MMH
L021	1-402-362-11	COIL (ANT MW)
L022	1-406-206-11	COIL, MW (OSC)
L031	1-402-071-11	COIL (ANT)
L032	1-406-090-11	COIL (OSC)
L033	1-410-525-11	INDUCTOR 220UH
L061	1-408-920-00	INDUCTOR 4.7MMH
L151	1-410-521-11	INDUCTOR 100UH
L152	1-410-521-11	INDUCTOR 100UH
L301	1-410-521-11	INDUCTOR 100UH
L601	1-410-521-11	(UK)....INDUCTOR 100UH
L601	1-410-575-11	(AEP)...INDUCTOR 820UH
L602	1-410-521-11	INDUCTOR 100UH
LPF061	1-235-164-00	FILTER, LOW PASS
LPF062	1-235-164-00	FILTER, LOW PASS
M1	X-3343-408-1	MOTOR ASSY
M2	X-3343-408-1	MOTOR ASSY
PM1	1-454-456-11	SOLENOID, PLUNGER
PM2	1-454-456-11	SOLENOID, PLUNGER
Q11	8-729-119-76	TRANSISTOR 2SA1175HFE
Q12	8-719-939-23	PHOTO TRANSISTOR GP2S09-C
Q81	8-729-111-29	TRANSISTOR 2SD1388
Q82	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q83	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q001	8-729-672-42	TRANSISTOR 2SC2724C

Ref.No.	Part No.	Description
Q002	8-729-672-42	TRANSISTOR 2SC2724C
Q003	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q004	8-729-173-38	TRANSISTOR 2SA733
Q021	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q022	8-729-173-38	TRANSISTOR 2SA733
Q023	8-729-900-61	TRANSISTOR DTA114ES
Q024	8-729-900-80	TRANSISTOR DTC114ES
Q025	8-729-900-80	TRANSISTOR DTC114ES
Q031	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q032	8-729-173-38	TRANSISTOR 2SA733
Q033	8-729-900-61	TRANSISTOR DTA114ES
Q034	8-729-900-80	TRANSISTOR DTC114ES
Q051	8-729-177-43	TRANSISTOR 2SD774
Q061	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q062	8-729-173-38	TRANSISTOR 2SA733
Q063	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q064	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q065	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q101	8-729-202-67	TRANSISTOR 2SK246GR3
Q102	8-729-201-83	TRANSISTOR 2SC3112B
Q103	8-729-202-67	TRANSISTOR 2SK246GR3
Q104	8-729-201-83	TRANSISTOR 2SC3112B
Q151	8-729-900-61	TRANSISTOR DTA114ES
Q152	8-729-900-80	TRANSISTOR DTC114ES
Q201	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q202	8-729-202-67	(D501)...TRANSISTOR 2SK246GR3
Q203	8-729-119-78	(D501)...TRANSISTOR 2SC2785-HFE
Q204	8-729-173-38	TRANSISTOR 2SA733
Q251	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q252	8-729-202-67	(D501)...TRANSISTOR 2SK246GR3
Q253	8-729-119-78	(D501)...TRANSISTOR 2SC2785-HFE
Q301	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q401	8-729-108-06	(D501)...TRANSISTOR 2SC1841
Q402	8-729-173-38	(D501)...TRANSISTOR 2SA733
Q451	8-729-108-06	(D501)...TRANSISTOR 2SC1841
Q501	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q502	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q503	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q551	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q552	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q553	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q601	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q602	8-729-173-38	TRANSISTOR 2SA733
Q603	8-729-173-38	TRANSISTOR 2SA733
Q701	8-729-116-57	TRANSISTOR 2SB1013
Q702	8-729-801-93	TRANSISTOR 2SD1387
Q703	8-729-173-38	TRANSISTOR 2SA733
Q704	8-729-116-57	TRANSISTOR 2SB1013
Q705	8-729-801-93	TRANSISTOR 2SD1387
Q706	8-729-173-38	TRANSISTOR 2SA733
Q718	8-729-173-38	TRANSISTOR 2SA733
Q719	8-729-173-38	TRANSISTOR 2SA733
Q720	8-729-173-38	TRANSISTOR 2SA733
Q721	8-729-173-38	TRANSISTOR 2SA733
Q722	8-729-802-22	TRANSISTOR 2SB1014
Q723	8-729-173-38	TRANSISTOR 2SA733
Q724	8-729-173-38	TRANSISTOR 2SA733

Ref.No.	Part No.	Description
CN221	*1-566-925-11	SOCKET, CONNECTOR 8P
CN222	*1-566-925-11	SOCKET, CONNECTOR 8P
CN223	*1-566-925-11	SOCKET, CONNECTOR 8P
CN505	*1-564-506-11	PLUG, CONNECTOR 3P
CN552	*1-564-339-00	PIN, CONNECTOR 5P
CN553	*1-564-339-61	PIN, CONNECTOR 5P
CN554	*1-564-340-61	PIN, CONNECTOR 6P
CN555	*1-564-337-00	PIN, CONNECTOR 3P
CN556	*1-564-337-61	PIN, CONNECTOR 3P
CN557	*1-564-342-11	PIN, CONNECTOR 8P
CN558	*1-564-342-61	PIN, CONNECTOR 8P
CNJ201	1-507-981-11	JACK (LARGE TYPE)(HEADPHONES)
CNP11	*1-564-501-11	PIN, CONNECTOR 8P
CNP12	*1-564-337-61	PIN, CONNECTOR 3P (DECK B)
CNP12	*1-564-337-00	PIN, CONNECTOR 3P (DECK A)
CNP13	*1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P
CNP81	*1-564-705-11	(D301:DECK A)...PIN, CONNECTOR (SMALL TYPE) 3P
CNP81	*1-564-706-11	(D501:DECK A)...PIN, CONNECTOR (SMALL TYPE) 4P
CNP81	*1-564-708-11	(D301:DECK B)...PIN, CONNECTOR (SMALL TYPE) 6P
CNP81	*1-564-709-11	(D501:DECK B)...PIN, CONNECTOR (SMALL TYPE) 7P
CNP82	*1-564-339-00	(EXCEPT D501:DECK B)..PIN, CONNECTOR 5P
CNP82	*1-564-339-61	(D501:DECK B)...PIN, CONNECTOR 5P
CNP83	*1-564-340-00	(D301:DECK B)...PIN, CONNECTOR 6P
CNP83	*1-564-340-61	(DECK B)...PIN, CONNECTOR 6P
CNP152	*1-566-923-11	PLUG, CONNECTOR 8P
CNP153	*1-566-923-11	PLUG, CONNECTOR 8P
CNP154	*1-566-923-11	PLUG, CONNECTOR 8P
CNP155	*1-566-923-11	PLUG, CONNECTOR 8P
CNP701	1-568-240-11	CONNECTOR, BOARD TO BOARD 12P
CNP702	*1-562-368-11	CONNECTOR, BOARD TO BOARD 8P
⚠CNP901	.1-556-035-00	(UK)....CORD, POWER
⚠CNP901	.1-558-944-11	(AEP)...CORD, POWER
CP151	1-233-151-11	COMPOSITION CIRCUIT BLOCK
CT021	1-141-227-00	CAP, TRIMMER
CT022	1-141-227-00	CAP, TRIMMER
CT031	1-141-266-31	CAP, TRIMMER
CT032	1-141-227-00	CAP, TRIMMER
D11	8-719-107-94	DIODE 1SS132
D81	8-719-107-94	(DECK B)...DIODE 1SS132
D021	8-719-923-64	DIODE KV1236-D
D024	8-719-000-26	DIODE US1060M
D025	8-719-000-26	DIODE US1060M
D026	8-719-000-26	DIODE US1060M
D031	8-719-923-64	DIODE KV1236-D
D061	8-719-000-26	DIODE US1060M
D151	8-719-000-26	DIODE US1060M
D152	8-719-000-26	DIODE US1060M
D153	8-719-000-26	DIODE US1060M
D154	8-719-000-26	DIODE US1060M
D155	8-719-000-26	DIODE US1060M
D156	8-719-000-26	DIODE US1060M
D157	8-719-000-26	DIODE US1060M
D158	8-719-000-26	DIODE US1060M

Ref.No.	Part No.	Description
D161	8-719-000-26	DIODE US1060M
D164	8-719-000-26	DIODE US1060M
D165	8-719-000-26	DIODE US1060M
D166	8-719-000-26	DIODE US1060M
D167	8-719-000-26	DIODE US1060M
D174	8-719-000-26	DIODE US1060M
D201	8-719-000-26	(D501)...DIODE US1060M
D301	8-719-301-43	DIODE SEL2410E-C
D302	8-719-301-43	DIODE SEL2410E-C
D303	8-719-301-43	DIODE SEL2410E-C
D304	8-719-301-43	DIODE SEL2410E-C
D306	8-719-000-26	DIODE US1060M
D401	8-719-000-26	(D501)...DIODE US1060M
D402	8-719-000-26	DIODE US1060M
D403	8-719-000-26	(D501)...DIODE US1060M
D406	8-719-000-26	DIODE US1060M
D451	8-719-000-26	(D501)...DIODE US1060M
D601	8-719-000-99	DIODE UZL-7H3
D602	8-719-000-99	DIODE UZL-7H3
D603	8-719-000-99	DIODE UZL-7H3
D701	8-719-200-77	DIODE 10E2N
D702	8-719-200-77	DIODE 10E2N
D703	8-719-301-38	DIODE SEL2210S-C
D704	8-719-301-38	DIODE SEL2210S-C
D705	8-719-301-38	(D501)...DIODE SEL2210S-C
D706	8-719-301-38	(D501)...DIODE SEL2210S-C
D707	8-719-304-38	DIODE SEL4414E-D
D708	8-719-301-38	(D501)...DIODE SEL2210S-C
D709	8-719-301-38	(D501)...DIODE SEL2210S-D
D710	8-719-304-38	DIODE SEL4414E-D
D712	8-719-301-38	DIODE SEL2210S-C
D711	8-719-303-84	DIODE SEL4914D
D713	8-719-000-26	DIODE US1060M
D901	8-719-200-77	DIODE 10E2N
D902	8-719-302-36	(D301)...DIODE RBV-402-01
D902	8-719-302-38	(D501)...DIODE RBV-602
D903	8-719-200-82	DIODE 11ES2
D904	8-719-200-82	DIODE 11ES2
D905	8-719-200-82	DIODE 11ES2
D906	8-719-200-82	DIODE 11ES2
D907	8-719-002-45	DIODE UZL-27L
D908	8-719-014-82	DIODE UZP-6.8B
D909	8-719-200-77	DIODE 10E2N
D910	8-719-200-77	DIODE 10E2N
D911	8-719-200-77	DIODE 10E2N
D912	8-719-200-77	DIODE 10E2N
D915	8-719-200-82	DIODE 11ES2
D916	1-807-913-21	DIODE 11EQS04
D917	1-807-913-21	DIODE 11EQS04
F401	⚠1-532-286-00	(D301)...FUSE, TIME-LAG (T2.5A)
F451	⚠1-532-286-00	(D301)...FUSE, TIME-LAG (T2.5A)
F901	⚠1-532-259-00	FUSE, TIME-LAG (T1.6A)
F903	⚠1-532-286-00	FUSE, TIME-LAG (T2.5A)
FE001	1-465-006-11	FRONT END (FM) (2 GANG)
FL101	1-519-512-11	INDICATOR TUBE, FLUORESCENT
HE1	1-543-535-11	(D301:DECK B)...HEAD, MAGNETIC (ERASE)
HP1	A-2108-129-A	(D501:DECK A)...CHASSIS ASSY, HEAD
HP1	1-543-536-11	(D301:DECK A)...HEAD, MAGNETIC (PLAY BACK)

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description			
C276	1-124-927-11	ELECT	4.7MF	20%	50V
C277	1-124-927-11	ELECT	4.7MF	20%	50V
C278	1-162-219-31	CERAMIC	68PF	5%	50V
C280	1-162-219-31	CERAMIC	68PF	5%	50V
C281	1-124-499-11	(D501)...ELECT	1MF	20%	10V
C282	1-124-252-00	(D501)...ELECT	0.33MF	20%	50V
C283	1-136-166-00	(D501)...FILM	0.12MF	20%	50V
C285	1-124-902-00	ELECT	0.47MF	20%	50V
C302	1-102-963-00	CERAMIC	33PF	5%	50V
C303	1-102-963-00	CERAMIC	33PF	5%	50V
C304	1-161-494-00	CERAMIC	0.022MF		25V
C305	1-161-494-00	CERAMIC	0.022MF		25V
C306	1-123-875-11	ELECT	10MF	20%	50V
C307	1-123-875-11	ELECT	10MF	20%	50V
C308	1-126-233-11	ELECT	22MF	20%	25V
C309	1-124-446-11	ELECT	47MF	20%	10V
C401	1-126-233-11	ELECT	22MF	20%	25V
C402	1-162-286-31	CERAMIC	220PF	10%	50V
C403	1-162-286-31	CERAMIC	220PF	10%	50V
C404	1-126-233-11	ELECT	22MF	20%	25V
C405	1-124-910-11	ELECT	47MF	20%	50V
C406	1-126-233-11	ELECT	22MF	20%	50V
C407	1-124-122-11	ELECT	100MF	20%	50V
C408	1-136-165-00	(D301)...FILM	0.1MF	5%	50V
C409	1-136-163-00	FILM	0.068MF	5%	50V
C410	1-136-163-00	FILM	0.068MF	5%	50V
C411	1-124-482-11	(D301)...ELECT	33MF	20%	25V
C412	1-126-176-11	(D501)...ELECT	220	20%	6.3V
C413	1-123-661-00	(D501)...ELECT	100	20%	6.3V
C414	1-126-176-11	(D501)...ELECT	220	20%	6.3V
C415	1-124-122-11	ELECT	100MF	20%	50V
C417	1-102-074-00	CERAMIC	0.001	10%	50V
C418	1-102-074-00	(D501)...CERAMIC	0.001	10%	50V
C421	1-136-163-00	FILM	0.068MF	5%	50V
C422	1-136-163-00	FILM	0.068MF	5%	50V
C451	1-126-233-11	ELECT	22MF	20%	25V
C452	1-162-286-31	CERAMIC	220PF	10%	50V
C453	1-162-286-31	CERAMIC	220PF	10%	50V
C454	1-126-233-11	ELECT	22MF	20%	25V
C455	1-124-910-11	ELECT	47MF	20%	50V
C459	1-136-163-00	FILM	0.068MF	5%	50V
C460	1-136-163-00	FILM	0.068MF	5%	50V
C471	1-136-163-00	FILM	0.068MF	5%	50V
C472	1-136-163-00	FILM	0.068MF	5%	50V
C501	1-136-158-00	FILM	0.027MF	5%	50V
C502	1-131-587-11	TANTALUM	0.68MF	10%	35V
C503	1-123-875-11	ELECT	10MF	20%	50V
C504	1-124-927-11	ELECT	4.7MF	20%	50V
C505	1-124-902-00	ELECT	0.47MF	20%	50V
C506	1-123-875-11	ELECT	10MF	20%	50V
C507	1-123-875-11	ELECT	10MF	20%	50V
C510	1-124-446-11	ELECT	47MF	20%	10V
C511	1-161-379-00	CERAMIC	0.01MF	30%	16V
C551	1-136-158-00	FILM	0.027MF	5%	50V
C552	1-131-587-11	TANTALUM	0.68MF	10%	35V
C553	1-123-875-11	ELECT	10MF	20%	50V
C554	1-124-464-11	ELECT	0.22MF	20%	50V
C555	1-124-902-00	ELECT	0.47MF	20%	50V
C556	1-123-875-11	ELECT	10MF	20%	50V
C557	1-123-875-11	ELECT	10MF	20%	50V
C601	1-123-875-11	ELECT	10MF	20%	50V
C602	1-123-875-11	ELECT	10MF	20%	50V
C604	1-124-443-00	ELECT	100MF	20%	10V
C605	1-124-443-00	ELECT	100MF	20%	10V
C606	1-126-233-11	ELECT	22MF	20%	25V
C607	1-124-120-11	ELECT	220MF	20%	16V
C701	1-124-443-00	ELECT	100MF	20%	10V
C702	1-124-925-11	ELECT	2.2MF	20%	50V
C703	1-124-925-11	ELECT	2.2MF	20%	50V
C704	1-124-925-11	ELECT	2.2MF	20%	50V
C901	1-161-744-00	CERAMIC	0.01MF		400V
C902	1-102-355-00	CERAMIC	0.01MF		250V
C904	1-124-026-00	(D301)...ELECT	3300MF	20%	35V
C904	1-126-224-11	(D501)...ELECT	4700MF	10%	50V
C905	1-124-026-00	(D301)...ELECT	3300MF	20%	35V
C905	1-126-224-11	(D501)...ELECT	4700MF	10%	50V
C906	1-126-101-11	ELECT	100MF	20%	16V
C907	1-124-893-11	ELECT	2200MF	20%	6.3V
C908	1-124-556-11	ELECT	2200MF	20%	16V
C909	1-124-556-11	ELECT	2200MF	20%	16V
C912	1-124-618-11	ELECT	2200MF	20%	35V
C913	1-124-618-11	ELECT	2200MF	20%	35V
C914	1-124-122-11	ELECT	100MF	20%	50V
C915	1-124-927-11	ELECT	4.7MF	20%	50V
C916	1-124-910-11	ELECT	47MF	20%	35V
C918	1-124-557-11	ELECT	1000MF	20%	25V
C919	1-124-463-00	ELECT	0.1MF	20%	50V
C920	1-123-875-11	ELECT	10MF	20%	50V
C921	1-161-494-00	CERAMIC	0.022MF		25V
C922	1-124-927-11	ELECT	4.7MF	20%	50V
C923	1-126-103-11	ELECT	470MF	20%	16V
C924	1-136-153-00	FILM	0.01MF	5%	50V
C925	1-136-153-00	FILM	0.01MF	5%	50V
C926	1-136-153-00	FILM	0.01MF	5%	50V
C927	1-136-153-00	FILM	0.01MF	5%	50V
C928	1-136-153-00	FILM	0.01MF	5%	50V
C929	1-136-153-00	FILM	0.01MF	5%	50V
C930	1-136-153-00	FILM	0.01MF	5%	50V
C940	1-124-463-00	ELECT	0.1MF	20%	50V
C941	1-123-875-11	ELECT	10MF	20%	50V
CF001	1-567-389-11	FILTER, CERAMIC			
CF002	1-567-389-11	FILTER, CERAMIC			
CF701	1-577-082-11	VIBRATOR, CERAMIC			
CJ904	*1-564-344-11	CONNECTOR, BOARD TO BOARD 8P			
CJ905	1-568-239-11	CONNECTOR, BOARD TO BOARD 12P			
CN151	*1-564-342-11	PIN, CONNECTOR 8P			
CN152	*1-566-925-11	SOCKET, CONNECTOR 8P			
CN153	*1-566-925-11	SOCKET, CONNECTOR 8P			
CN154	*1-566-925-11	SOCKET, CONNECTOR 8P			
CN155	*1-566-925-11	SOCKET, CONNECTOR 8P			
CN201	*1-566-167-11	HOUSING, CONNECTOR 5P			
CN211	*1-565-957-11	PLUG, CONNECTOR 8P			
CN212	*1-565-957-11	PLUG, CONNECTOR 8P			
CN213	*1-565-957-11	PLUG, CONNECTOR 8P			

Ref.No.	Part No.	Description			
C075	1-130-484-00	CERAMIC	0.012MF	30%	16V
C076	1-123-382-00	ELECT	3.3MF	20%	50V
C077	1-123-382-00	ELECT	3.3MF	20%	50V
C079	1-161-375-00	CERAMIC	0.0022MF	30%	16V
C080	1-130-484-00	CERAMIC	0.012MF	30%	16V
C081	1-123-382-00	ELECT	3.3MF	20%	50V
C082	1-123-382-00	ELECT	3.3MF	20%	50V
C084	1-161-375-00	CERAMIC	0.0022MF	30%	16V
C085	1-123-875-11	ELECT	10MF	20%	50V
C086	1-161-379-00	CERAMIC	0.01MF	30%	16V
C087	1-124-463-00	ELECT	0.1MF	20%	50V
C088	1-161-379-00	CERAMIC	0.01MF	30%	16V
C089	1-124-927-11	ELECT	4.7MF	20%	50V
C090	1-123-875-11	ELECT	10MF	20%	50V
C091	1-161-494-00	CERAMIC	0.022MF		25V
C092	1-124-120-11	ELECT	220MF	20%	16V
C093	1-162-207-31	CERAMIC	22PF	5%	50V
C095	1-161-494-00	CERAMIC	0.022MF		25V
C096	1-161-494-00	CERAMIC	0.022MF		25V
C101	1-102-961-00	CERAMIC	27PF	5%	50V
C102	1-102-961-00	CERAMIC	27PF	5%	50V
C103	1-161-494-00	CERAMIC	0.022MF		25V
C104	1-124-477-11	ELECT	47MF	20%	16V
C105	1-161-379-00	CERAMIC	0.01MF	30%	16V
C106	1-161-379-00	CERAMIC	0.01MF	30%	16V
C107	1-161-379-00	CERAMIC	0.01MF	30%	16V
C108	1-161-494-00	CERAMIC	0.022MF		25V
C109	1-124-477-11	ELECT	47MF	20%	16V
C110	1-124-925-11	ELECT	2.2MF	20%	50V
C111	1-124-463-00	ELECT	0.1MF	20%	50V
C112	1-161-379-00	CERAMIC	0.01MF	30%	16V
C113	1-136-173-00	FILM	0.47MF	5%	50V
C114	1-161-494-00	CERAMIC	0.022MF		25V
C115	1-124-463-00	ELECT	0.1MF		50V
C151	1-124-446-11	ELECT	47MF	20%	10V
C154	1-124-927-11	ELECT	4.7MF	20%	50V
C155	1-125-486-11	DOUBLELAYERS	0.22F		5.5V
C156	1-161-379-00	CERAMIC	0.01MF	30%	16V
C157	1-123-875-11	ELECT	10MF	20%	50V
C171	1-162-286-31	CERAMIC	220PF	10%	50V
C172	1-162-286-31	CERAMIC	220PF	10%	50V
C173	1-162-286-31	CERAMIC	220PF	10%	50V
C174	1-162-286-31	CERAMIC	220PF	10%	50V
C175	1-162-286-31	CERAMIC	220PF	10%	50V
C176	1-162-286-31	CERAMIC	220PF	10%	50V
C177	1-162-286-31	CERAMIC	220PF	10%	50V
C178	1-162-286-31	CERAMIC	220PF	10%	50V
C179	1-162-286-31	CERAMIC	220PF	10%	50V
C180	1-162-286-31	CERAMIC	220PF	10%	50V
C181	1-162-286-31	CERAMIC	220PF	10%	50V
C182	1-162-286-31	CERAMIC	220PF	10%	50V
C183	1-162-286-31	CERAMIC	220PF	10%	50V
C184	1-162-286-31	CERAMIC	220PF	10%	50V
C185	1-124-446-11	ELECT	47MF	20%	10V
C202	1-124-927-11	ELECT	4.7MF	20%	50V
C204	1-162-282-31	CERAMIC	100PF	10%	50V
C205	1-162-219-31	CERAMIC	68PF	5%	50V

Ref.No.	Part No.	Description			
C206	1-124-499-11	ELECT	1MF	20%	50V
C207	1-161-327-00	CERAMIC	0.0033MF	20%	16V
C208	1-161-374-11	CERAMIC	0.0015MF	20%	16V
C209	1-124-446-11	ELECT	47MF	20%	10V
C210	1-124-927-11	ELECT	4.7MF	20%	50V
C212	1-124-927-11	ELECT	4.7MF	20%	50V
C213	1-124-254-00	ELECT	0.68MF	20%	50V
C214	1-130-490-11	MYLAR	0.039MF	5%	50V
C215	1-130-499-00	MYLAR	0.22MF	5%	50V
C216	1-130-484-00	MYLAR	0.012MF	5%	50V
C217	1-130-493-00	MYLAR	0.068MF	5%	50V
C218	1-130-478-00	MYLAR	0.0039MF	5%	50V
C219	1-130-487-00	MYLAR	0.022MF	5%	50V
C220	1-130-472-00	MYLAR	0.0012MF	5%	50V
C221	1-161-329-00	CERAMIC	0.0068MF	30%	16V
C222	1-162-289-31	CERAMIC	390PF	10%	50V
C223	1-124-446-11	ELECT	47MF	20%	10V
C224	1-124-446-11	ELECT	47MF	20%	10V
C225	1-162-294-31	CERAMIC	0.001MF	10%	50V
C226	1-124-927-11	ELECT	4.7MF	20%	50V
C227	1-124-927-11	ELECT	4.7MF	20%	50V
C228	1-162-219-31	CERAMIC	68PF	5%	50V
C229	1-124-446-11	ELECT	47MF	20%	10V
C230	1-124-446-11	ELECT	47MF	20%	10V
C231	1-124-499-11	(D501)...ELECT	1MF	20%	10V
C232	1-124-252-00	(D501)...ELECT	0.33MF	20%	50V
C233	1-136-166-00	(D501)...FILM	0.12MF	20%	50V
C234	1-124-446-11	(D501)...ELECT	47MF	20%	10V
C235	1-124-902-11	ELECT	0.47MF	20%	50V
C236	1-126-176-11	ELECT	220MF	20%	10V
C238	1-124-464-11	(D501)...ELECT	1MF	20%	50V
C239	1-124-446-11	ELECT	47MF	20%	10V
C240	1-124-446-11	ELECT	47MF	20%	10V
C242	1-126-176-11	ELECT	220MF	20%	10V
C252	1-124-927-11	ELECT	4.7MF	20%	50V
C254	1-162-282-31	CERAMIC	100PF	10%	50V
C255	1-162-219-31	CERAMIC	68PF	5%	50V
C256	1-124-499-11	ELECT	1MF	20%	50V
C257	1-161-327-00	CERAMIC	0.0033MF	20%	16V
C258	1-161-374-11	CERAMIC	0.0015MF	20%	16V
C259	1-124-446-11	ELECT	47MF	20%	10V
C260	1-124-927-11	ELECT	4.7MF	20%	50V
C261	1-162-219-31	CERAMIC	68PF	5%	50V
C262	1-124-927-11	ELECT	4.7MF	20%	50V
C263	1-124-254-00	ELECT	0.68MF	20%	50V
C264	1-130-490-11	MYLAR	0.039MF	5%	50V
C265	1-130-499-00	MYLAR	0.22MF	5%	50V
C266	1-130-484-00	MYLAR	0.012MF	5%	50V
C267	1-130-493-00	MYLAR	0.068MF	5%	50V
C268	1-130-478-00	MYLAR	0.0039MF	5%	50V
C269	1-130-487-00	MYLAR	0.022MF	5%	50V
C270	1-130-472-00	MYLAR	0.0012MF	5%	50V
C271	1-161-329-00	CERAMIC	0.0068MF	30%	16V
C272	1-162-289-31	CERAMIC	390PF	10%	50V
C273	1-124-446-11	ELECT	47MF	20%	10V
C274	1-124-446-11	ELECT	47MF	20%	10V
C275	1-162-294-31	CERAMIC	0.001MF	10%	50V

SECTION 5
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

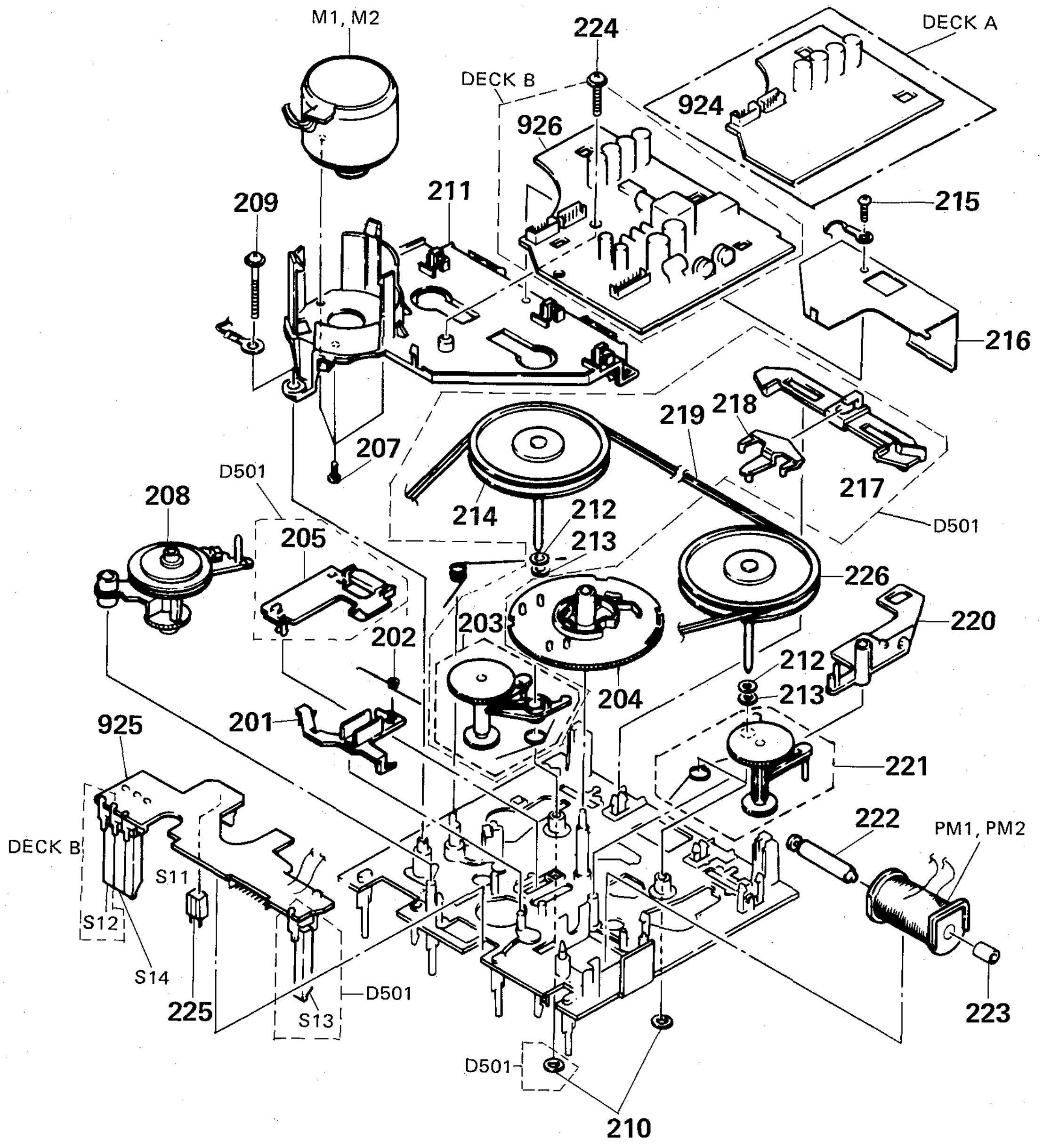
SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description
901	*A-4333-438-A	(D501:UK)....MOUNTED PCB, MAIN
	*A-4333-444-A	(D501:AEP)...MOUNTED PCB, MAIN
	*A-4410-936-A	(D301:UK)....MOUNTED PCB, MAIN
	*A-4410-937-A	(D301:AEP)...MOUNTED PCB, MAIN
902	*A-4333-443-A	(D501:UK)...MOUNTED PCB, POWER AMPLIFIER
	*A-4333-445-A	(D501:AEP)..MOUNTED PCB, POWER AMPLIFIER
	*A-4388-817-A	(D301:UK) ..MOUNTED PCB, POWER AMPLIFIER
	*A-4388-818-A	(D301:AEP)..MOUNTED PCB, POWER AMPLIFIER
903	*A-4333-439-A	(D501)...MOUNTED PCB, CONTROL
	*A-4375-436-A	(D301)...MOUNTED PCB, CONTROL
904	*1-629-923-11	PC BOARD, VOL
905	*1-629-859-11	PC BOARD, SYSTEM CONTROL (A)
906	*1-629-860-11	PC BOARD, SYSTEM CONTROL (B)
907	*1-629-861-11	PC BOARD, SYSTEM CONTROL (C)
908	*1-629-858-11	PC BOARD, H.P
909	1-533-183-11	HOLDER, FUSE
924	*1-624-147-11	PC BOARD, MD-A
925	*1-624-148-11	PC BOARD, LEAF SW
926	*1-624-146-11	(DECK B)...PC BOARD, MD-B
BP1	*1-535-140-00	BASE POST 22MM (10MM PITCH) 3P
BP2	*1-535-140-00	BASE POST 22MM (10MM PITCH) 3P
BP3	*1-535-139-00	(UK)...BASE POST 22MM (10MM PITCH) 2P
BP4	*1-535-139-00	BASE POST 22MM (10MM PITCH) 2P
BP5	*1-535-139-00	BASE POST 22MM (10MM PITCH) 2P
C41	1-162-289-31	CERAMIC 390PF 10% 50V
C42	1-136-157-00	FILM 0.022MF 5% 50V
C43	1-124-282-00	ELECT 22MF 20% 25V
C44	1-162-288-31	(DECK B)...CERAMIC 330PF 10% 50V
C45	1-136-273-91	(DECK B)...FILM 75PF 5% 630V
C47	1-162-217-31	(D501:DECK B)...CERAMIC 56PF 5% 50V
C47	1-162-288-31	(D301:DECK B)...CERAMIC 330PF 10% 50V
C48	1-162-217-31	(D501:DECK B)...CERAMIC 56PF 5% 50V
C61	1-162-289-31	CERAMIC 390PF 10% 50V
C62	1-136-157-00	FILM 0.022MF 5% 50V
C63	1-124-282-00	ELECT 22MF 20% 25V
C64	1-162-288-31	(DECK B)...CERAMIC 330PF 10% 50V
C65	1-136-273-91	(DECK B)...FILM 75PF 5% 630V
C67	1-162-217-31	(D501:DECK B)...CERAMIC 56PF 5% 50V
C67	1-162-288-31	(D301:DECK B)...CERAMIC 330PF 10% 50V
C68	1-162-217-31	(D501)...CERAMIC 56PF 5% 50V
C81	1-126-101-11	ELECT 100MF 20% 16V
C82	1-126-101-11	ELECT 100MF 20% 16V
C83	1-124-499-11	(DECK B)...ELECT 1MF 20% 50V
C84	1-124-925-11	(DECK B)...ELECT 2.2MF 20% 50V

Ref.No.	Part No.	Description
C85	1-130-477-00	(D501:DECK B)...MYLAR 0.0033MF 5% 50V
C85	1-130-339-00	(D301:DECK B)...FILM 0.0056MF 5% 100V
C86	1-130-475-00	(D501:DECK B)...MYLAR 0.0022MF 5% 50V
C86	1-130-593-11	(D301:DECK B)...FILM 0.0033MF 5% 100V
C87	1-130-475-00	(D501:DECK B)...MYLAR 0.0022MF 5% 50V
C87	1-136-593-11	(D301:DECK B)...FILM 0.0033MF 5% 100V
C88	1-136-562-11	(D501:DECK B)...FILM 0.0082MF 5% 630V
C88	1-136-601-11	(D301:DECK B)...FILM 0.01MF 5% 630V
C001	1-161-379-00	CERAMIC 0.01MF 30% 16V
C002	1-161-379-00	CERAMIC 0.01MF 30% 16V
C003	1-161-379-00	CERAMIC 0.01MF 30% 16V
C006	1-126-101-11	ELECT 100MF 20% 16V
C007	1-161-379-00	CERAMIC 0.01MF 30% 16V
C008	1-124-477-11	ELECT 47MF 20% 16V
C009	1-161-379-00	CERAMIC 0.01MF 30% 16V
C024	1-161-494-00	CERAMIC 0.022MF 25V
C025	1-161-379-00	CERAMIC 0.01MF 30% 16V
C026	1-162-203-31	CERAMIC 15PF 5% 50V
C027	1-130-014-00	FILM 470PF 5% 50V
C028	1-161-379-00	CERAMIC 0.01MF 30% 16V
C029	1-161-494-00	CERAMIC 0.022MF 25V
C034	1-102-120-00	CERAMIC 0.0018MF 10% 50V
C035	1-161-374-11	CERAMIC 0.0015MF 20% 16V
C036	1-161-494-00	CERAMIC 0.022MF 25V
C037	1-162-282-31	CERAMIC 100PF 10% 50V
C038	1-161-379-00	CERAMIC 0.01MF 30% 16V
C039	1-101-081-00	CERAMIC 130PF 5% 50V
C040	1-130-047-00	FILM 180PF 5% 50V
C051	1-161-379-00	CERAMIC 0.01MF 30% 16V
C052	1-162-207-31	CERAMIC 22PF 5% 50V
C053	1-162-195-31	CERAMIC 4.7PF 10% 50V
C061	1-126-103-11	ELECT 470MF 20% 16V
C062	1-161-494-00	CERAMIC 0.022MF 25V
C063	1-161-494-00	CERAMIC 0.022MF 25V
C064	1-123-382-00	ELECT 3.3MF 20% 50V
C065	1-161-379-00	CERAMIC 0.01MF 30% 16V
C066	1-161-379-00	CERAMIC 0.01MF 30% 16V
C067	1-161-494-00	CERAMIC 0.022MF 25V
C069	1-162-211-31	CERAMIC 33PF 5% 50V
C070	1-124-499-11	ELECT 1MF 20% 50V
C071	1-124-499-11	ELECT 1MF 20% 50V
C072	1-124-499-11	ELECT 1MF 20% 50V
C073	1-124-252-00	ELECT 0.33MF 20% 50V
C074	1-123-875-11	ELECT 10MF 20% 50V

4. Tape Transport MECHANISM (2)


M1, M2
224
DECK A
DECK B
924
926
211
209
215
216
219
218
207
D501
208
214
212
213
217
D501
205
226
203
202
220
204
212
213
925
201
221
222
PM1, PM2
DECK B
S11
S12
S14
225
D501
S13
223
D501
210

No.	Part No.	Description	Remarks
201	3-343-453-01	SLIDER (BRAKE PLATE)	
202	3-343-429-01	(D501)...SPRING, TORSION	
	3-343-482-01	(D301)...SPRING, TORSION	
203	X-3343-406-1	(D501)...LEVER (TU ARM REV) ASSY	
204	3-343-470-01	GEAR (CAM GEAR)	
205	*3-343-461-01	(D501)...SLIDER	
206	3-343-430-01	SPRING, TORSION	
207	7-627-556-28	SCREW +P 2.6X3.5	
208	X-3343-414-1	LAVER (FR ARM) ASSY	
209	3-343-403-01	SCREW (PTTWH 2X18)	
210	3-343-473-01	WASHER, NYLON	
211	*X-3343-407-1	(D501)...BASE (THRUST RETAINER) ASSY	
	*X-3343-421-1	(D301)...BASE (THRUST RETAINER) ASSY	
212	4-605-835-11	WASHER (2.6), POLYSLIDER	
213	3-307-482-00	WASHER, LUMILER	
214	X-3343-431-1	(D501)...FLYWHEEL (REV) COMPLETE ASSY	
215	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT	
216	3-343-480-01	PLATE, SHIELD	
217	*3-343-457-01	(D501)...SLIDER (REVERSE SLIDER)	
218	3-343-462-01	(D501)...LEVER	
219	3-343-426-02	(D501)...BELT (CAPSTAN BELT SQUARE)	
	3-343-488-01	(D301)...BELT (CAPSTAN BELT SQUARE)	
220	3-343-493-01	LEVER (PM LEVER)	
221	X-3343-405-1	LEVER (TU ARM FWD) ASSY	
222	*3-343-425-01	ARBOR(MOVABLE IRON ARBOR),IRON	
223	*3-343-424-01	ARBOR (FIXED IRON ARBOR), IRON	
224	3-343-404-01	SCREW (PTPWH 2X10)	
225	*3-343-419-01	HOLDER (S SENSER A)	
226	X-3343-429-1	FLYWHEEL COMPLETE ASSY	
924	*1-624-147-11	(DECK A)...PC BOARD, MD-A	
925	*1-624-148-11	PC BOARD, LEAF SW	
926	*1-624-146-11	(DECK B)...PC BOARD, MD-B	
M1	X-3343-408-1	MOTOR ASSY	
M2	X-3343-408-1	MOTOR ASSY	
PM1	1-454-456-11	SOLENOID, PLUNGER	
PM2	1-454-456-11	SOLENOID, PLUNGER	
S11	1-571-281-21	SWITCH, LEAF (HALF)	
S12	1-571-281-21	(DECK B)...SWITCH, LEAF (REC (A))	
S13	1-571-281-21	(D501:DECK B)...SWITCH, LEAF (REC (B))	
S14	1-571-281-21	SWITCH, LEAF (CrO2)	

Ref.No.	Part No.	Description
R720	1-249-429-11	CARBON 10K 5% 1/4W
R731	1-249-417-11	CARBON 1K 5% 1/4W
R734	1-247-895-00	CARBON 470K 5% 1/4W
R735	1-247-895-00	CARBON 470K 5% 1/4W
R737	1-249-431-11	(D301)...CARBON 15K 5% 1/4W
R762	1-249-411-11	CARBON 330 5% 1/4W
R763	1-249-411-11	CARBON 330 5% 1/4W
R764	1-249-411-11	(D501)...CARBON 330 5% 1/4W
R765	1-249-411-11	(D501)...CARBON 330 5% 1/4W
R766	1-249-409-11	CARBON 220 5% 1/4W
R767	1-249-411-11	(D501)...CARBON 330 5% 1/4W
R768	1-249-411-11	(D501)...CARBON 330 5% 1/4W
R769	1-249-409-11	CARBON 220 5% 1/4W
R770	1-249-411-11	CARBON 330 5% 1/4W
R771	1-249-411-11	CARBON 330 5% 1/4W
R901	⚠.1-212-934-00	FUSIBLE 1 5% 1/2W F
R902	⚠.1-212-950-00	FUSIBLE 4.7 5% 1/2W F
R903	1-249-421-11	CARBON 2.2K 5% 1/4W
R909	1-249-433-11	CARBON 22K 5% 1/4W
R912	1-249-419-11	(D301)...CARBON 1.5K 5% 1/4W
R912	1-249-423-11	(D501)...CARBON 2.4K 5% 1/4W
R920	1-249-417-11	CARBON 1K 5% 1/4W
R921	1-249-429-11	CARBON 10K 5% 1/4W
RT061	1-228-994-00	RES, ADJ, CARBON 10K
RT062	1-228-995-00	RES, ADJ, CARBON 22K
RT501	1-228-994-00	RES, ADJ, CARBON 10K
RT551	1-228-994-00	RES, ADJ, CARBON 10K
RV41	1-228-989-00	RES, ADJ, CARBON 470
RV42	1-230-499-11	(D501:DECK B)...RES, ADJ, CARBON 100K
RV42	1-230-498-11	(D301:DECK B)...RES, ADJ, CARBON 47K
RV61	1-228-989-00	RES, ADJ, CARBON 470
RV62	1-230-499-11	(D501:DECK B)...RES, ADJ, CARBON 100K
RV62	1-230-498-11	(D301:DECK B)...RES, ADJ, CARBON 47K
RV201	1-237-986-11	RES, VAR, SLIDE 250K (100Hz)
RV202	1-237-986-11	RES, VAR, SLIDE 250K (330Hz)
RV203	1-237-986-11	RES, VAR, SLIDE 250K (1kHz)
RV204	1-237-986-11	RES, VAR, SLIDE 250K (3.3kHz)
RV205	1-237-986-11	RES, VAR, SLIDE 250K (10kHz)
RV206	1-237-884-11	RES, VAR, CARBON 100K/100K (VOLUME)
RV251	1-237-986-11	RES, VAR, SLIDE 250K (100Hz)
RV252	1-237-986-11	RES, VAR, SLIDE 250K (330Hz)
RV253	1-237-986-11	RES, VAR, SLIDE 250K (1kHz)
RV254	1-237-986-11	RES, VAR, SLIDE 250K (3.3kHz)
RV255	1-237-986-11	RES, VAR, SLIDE 250K (10kHz)
RY81	1-515-614-11	(DECK B)...RELAY
RY401	1-515-533-11	(D501).....RELAY
S11	1-571-281-21	SWITCH, LEAF (HALF)
S12	1-571-281-21	(DECK B)...SWITCH, LEAF (REC (A))
S13	1-571-281-21	(D501:DECK B)...SWITCH, LEAF (REC (B))
S14	1-571-281-21	SWITCH, LEAF (CrO2)
S151	1-554-303-21	SWITCH, KEY BOARD (1)
S152	1-554-303-21	SWITCH, KEY BOARD (2)
S153	1-554-303-21	SWITCH, KEY BOARD (3)
S154	1-554-303-21	SWITCH, KEY BOARD (4)
S155	1-554-303-21	SWITCH, KEY BOARD (5)
S156	1-554-303-21	SWITCH, KEY BOARD (6)

Ref.No.	Part No.	Description
S157	1-554-303-21	SWITCH, KEY BOARD (7)
S158	1-554-303-21	SWITCH, KEY BOARD (8)
S159	1-554-303-21	SWITCH, KEY BOARD (9)
S160	1-554-303-21	SWITCH, KEY BOARD (0)
S161	1-554-303-21	SWITCH, KEY BOARD (+)
S162	1-554-303-21	SWITCH, KEY BOARD (-)
S163	1-554-303-21	SWITCH, KEY BOARD (SHIFT)
S164	1-554-303-21	SWITCH, KEY BOARD (BAND)
S165	1-554-303-21	SWITCH, KEY BOARD (MEMORY)
S166	1-554-303-21	SWITCH, KEY BOARD (AUTO/MENUAL)
S167	1-554-303-21	SWITCH, KEY BOARD (MS)
S201	1-571-292-11	(D501)...SWITCH, PUSH (1KEY)(SURROUND)
S202	1-571-292-11	(D501)...SWITCH, PUSH (1KEY)(DBFB)
S301	1-554-303-21	SWITCH, KEY BOARD (PHONO)
S302	1-554-303-21	SWITCH, KEY BOARD (TUNER)
S303	1-554-303-21	SWITCH, KEY BOARD (CD)
S304	1-554-303-21	SWITCH, KEY BOARD (TAPE)
S701	1-554-303-21	SWITCH, KEY BOARD (DUBBING NORMAL SPEED)
S702	1-554-303-21	SWITCH, KEY BOARD (DUBBING HIGH SPEED)
S703	1-554-303-21	SWITCH, KEY BOARD (●) DECK B
S704	1-554-303-21	SWITCH, KEY BOARD (►►) DECK B
S705	1-554-303-21	SWITCH, KEY BOARD (◄◄) DECK B
S706	1-554-303-21	(D501)...SWITCH, KEY BOARD (◄) DECK A
S707	1-554-303-21	SWITCH, KEY BOARD (►) DECK A
S708	1-554-303-21	SWITCH, KEY BOARD (■) DECK A
S709	1-554-303-21	SWITCH, KEY BOARD (■) DECK B
S710	1-554-303-21	SWITCH, KEY BOARD (▮▮) DECK B
S711	1-554-303-21	SWITCH, KEY BOARD (►) DECK B
S712	1-554-303-21	(D501)...SWITCH, KEY BOARD (◄) DECK B
S713	1-554-303-21	SWITCH, KEY BOARD (◉) DECK B
S714	1-554-303-21	SWITCH, KEY BOARD (◄◄) DECK A
S715	1-554-303-21	SWITCH, KEY BOARD (►►) DECK A
S716	1-570-157-21	SWITCH, SLIDE (DOLBY)
S717	1-570-432-11	(D501)...SWITCH, SLIDE (DIRECTION)
S901	⚠.1-553-318-31	SWITCH, PUSH (AC POWER)(1 KEY)(POWER)
T81	1-433-331-11	(D501:DECK B)...TRANSFORMER, BIAS OSCILLATION
T81	1-433-338-12	(D301:DECK B)...TRANSFORMER, BIAS OSCILLATION
T901	⚠.1-449-545-12	(D301:AEP)...TRANSFORMER, POWER
T901	⚠.1-449-546-13	(D301:UK)....TRANSFORMER, POWER
T901	⚠.1-449-648-12	(D501:UK)....TRANSFORMER, POWER
T901	⚠.1-449-649-12	(D501:AEP)...TRANSFORMER, POWER
TM001	1-536-708-00	(UK)..TERMINAL BOARD, PUSH 4P(ANTENNA)
TM001	*1-537-138-11	(AEP)...TERMINAL BOARD (ANTENNA)
TM201	1-563-562-11	JACK, PIN 4P (PHONO/CD)
TM202	*1-566-210-11	PIN, CONNECTOR 3P (ONLY FOR PS-LX40P)
TM401	1-537-156-11	TERMINAL BOARD (SPEAKER)
TM901	*1-535-476-11	(AEP)...TERMINAL
TP1	1-564-505-11	PLUG, CONNECTOR 3P
TP2	*1-508-912-00	PIN, CONNECTOR, 3P
TP061	*1-560-060-00	PIN, CONNECTOR 2P (NULL)
TP703	*1-564-505-11	PLUG, CONNECTOR 2P
X061	1-577-075-11	OSCILLATOR, CERAMIC (456kHz)
X101	1-577-126-11	VIBRATOR, CRYSTAL (7.2MHz)
XT151	1-577-082-11	VIBRATOR, CERAMIC (4MHz)
XT301	1-567-839-11	VIBRATOR, CERAMIC (3MHz)

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

PS-LX40/LX40P

SERVICE MANUAL

AEP Model
UK Model
PS-LX40P
E Model
PS-LX40/LX40P

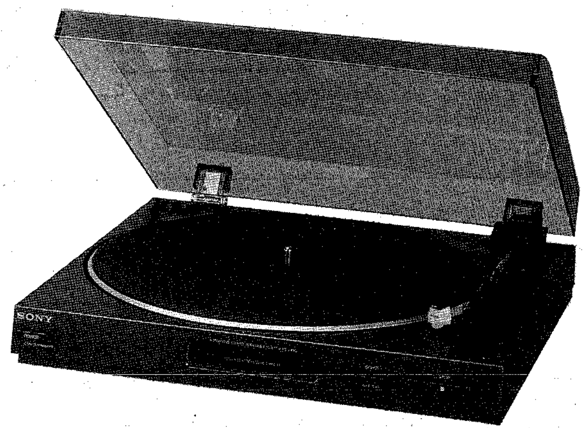
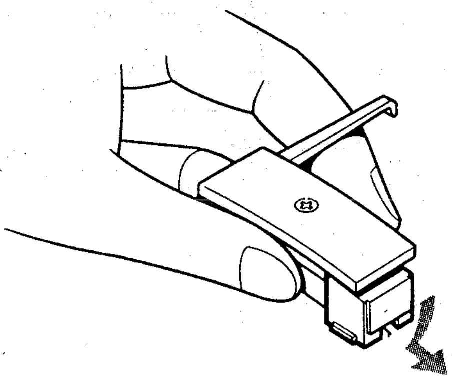


Photo : PS-LX40

SPECIFICATIONS

Turntable	
Platter	30 cm
Motor	DC servo motor
Drive system	Belt drive
Speed	33⅓ rpm/45 rpm switchable
Wow and flutter	0.2% (WRMS)
Signal-to-noise ratio	50 dB (DIN-B)
Automatic system	Return, reject
Tonearm	
Type	Statically balanced
Pivot-to stylus length	203 mm
Overall arm length	235 mm
Cartridge	
Type	Moving magnet type
Frequency response	20 Hz – 20kHz
Stylus	ND-155G
General	
Dimensions	PS-LX40 : 355 × 95 × 345 mm (w/h/d) PS-LX40P: Approx. 355 × 95 × 345 mm (14 × 3¾ × 13⅝ inches)
Weight	PS-LX40 : Approx. 2.5 kg PS-LX40P: Approx. 2.1 kg (4 lb 11 oz)
Power requirements	PS-LX40: 110 – 120 V, 220 – 240 V AC adjustable, 50/60 Hz PS-LX40P: 12V DC. Supplied from STEREO DECK RECEIVER (HST-).
Power consumption	4 W
Accessory supplied	45-rpm adaptor (1)
Optional accessories	Replacement stylus ND-155G

REPLACING THE STYLUS



Replace the stylus after about 400 hours of use because using a worn stylus will damage records.
An ND-155G replacement stylus is available at your Sony dealer.
Be sure to turn the amplifier off before proceeding with replacement.

1 While holding the cartridge, detach the stylus assembly as illustrated.
2 Insert the new stylus into the cartridge.

Design and specifications subject to change without notice.

MICROFILM

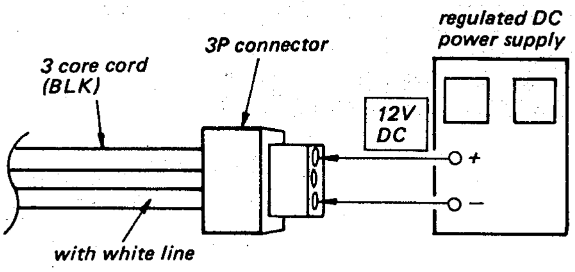
STEREO TURNTABLE SYSTEM

SONY®

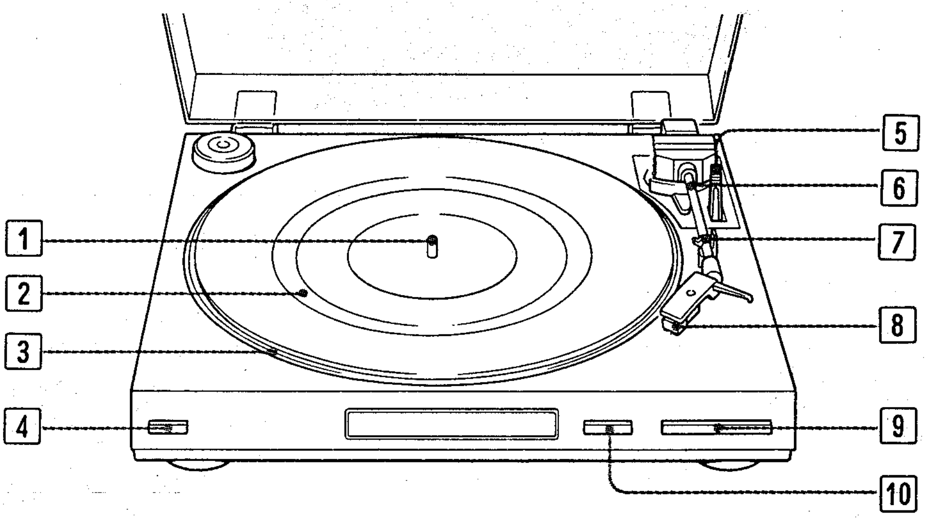
REPAIRING PRECAUTION (PS-LX40P only)

[To spply B+ voltage]

The power of this unit is fed from HST-D201, D301, D301CD or D501CD. Because of this, connect the regulated power supply as illustrated right when this unit alone operates.

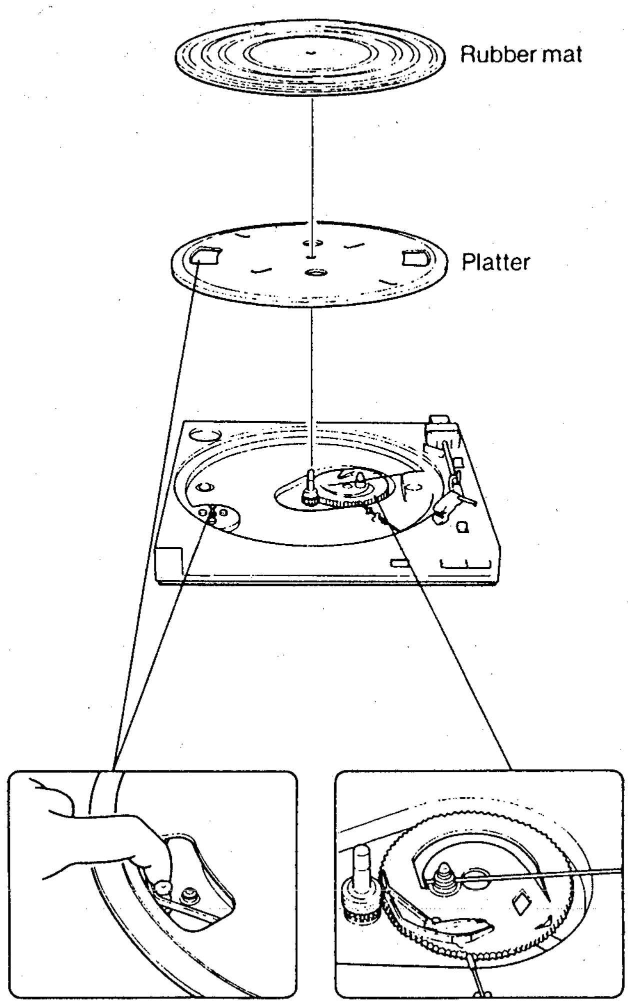

3 core cord (BLK)
3P connector
regulated DC power supply
12V DC
+
−
with white line

LOCATION AND FUNCTION OF CONTROLS


1
2
3
4
5
6
7
8
9
10

- **1 Center spindle**
- **2 Rubber mat**
- **3 Turntable platter**
- 4 POWER switch (PS-LX40 only)
- **5 Cueing lever (▼/▼)**
- **6 Tonearm**
- **7 Arm rest**
- **8 Cartridge**
- **9 REJECT button**
- **10 SPEED select button**
  Allows selection of 45 rpm or 33 rpm turntable speed.

TURNTABLE ASSEMBLY

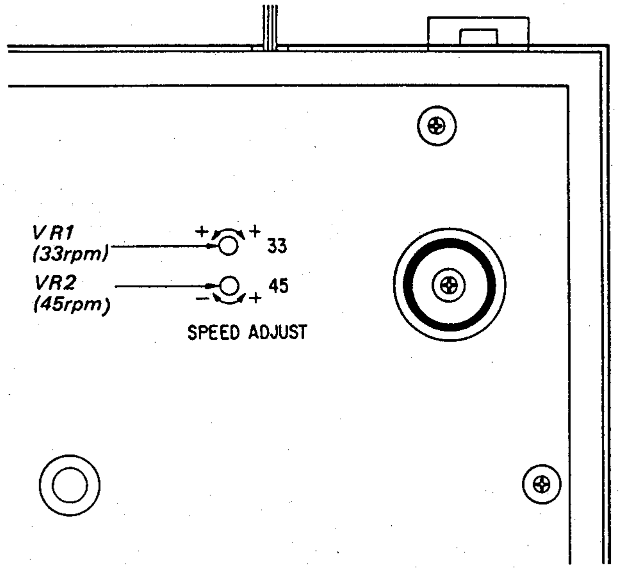

Rubber mat
Platter

Hook the belt on the motor pulley.
If the belt is removed from the platter, replace it with the glossy side outward.

Speed Adjustment

Note: Be sure to perform 45rpm adjustment before 33 rpm.

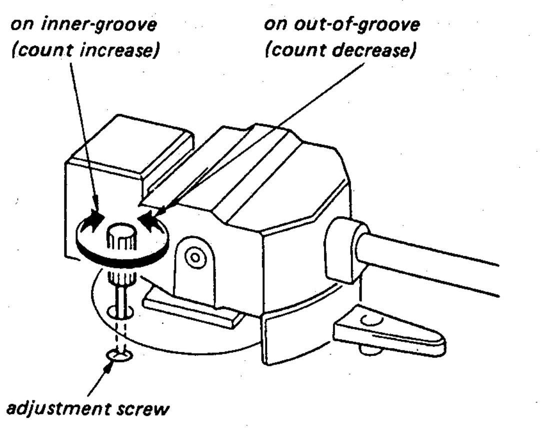
1. Place a stroboscope board on the turntable sheet.
2. Set the SPEED switch to 45.
   Press the START button.
   Adjust VR2 so that the stripped pattern of stroboscope board is stationary.
3. Set the SPEED switch to 33.
   Adjust VR1 in the same way.


VR1 (33rpm)
+ 33
VR2 (45rpm)
− + 45
SPEED ADJUST

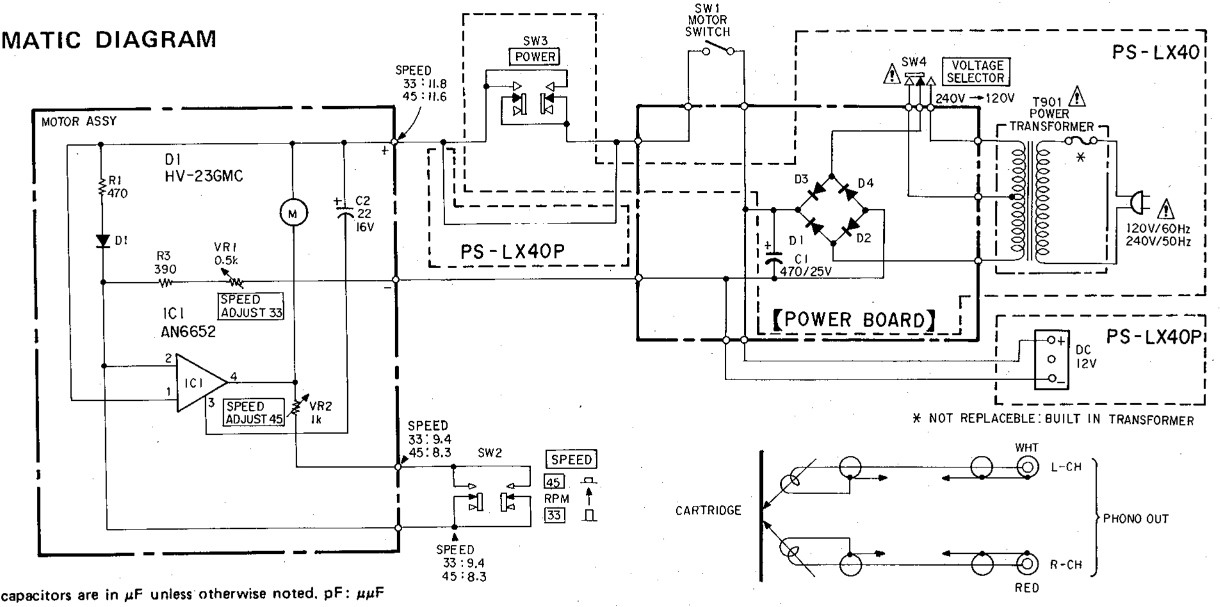
Stylus Drop-point Adjustment

1. Place a test record (YFSC-16) on the turntable sheet.
2. Set the SPEED switch to 33.
3. Press the START button.
4. By using a screwdriver, turn the adjustment screw so that the stylus tip drops on the record at the 7–17 counts position.
5. Move the arm to return detecting groove and confirm that the auto-return operation is started normally.

Note: The proper adjustment for a 30cm record is also correct for a 17cm record.
When turning adjustment screw, put the arm on the arm rest.


on inner-groove (count increase)
on out-of-groove (count decrease)
adjustment screw

SCHEMATIC DIAGRAM


MOTOR ASSY
D1 HV-23GMC
R1 470
D1
R3 390
VR1 0.5k
SPEED ADJUST 33
IC1 AN6652
IC1
SPEED ADJUST 45
VR2 1k
M
C2 22 16V
SPEED 33 : 11.8 45 : 11.6
SW3 POWER
PS-LX40P
SW1 MOTOR SWITCH
SW4 VOLTAGE SELECTOR
240V → 120V
T901 POWER TRANSFORMER
PS-LX40
D3 D4 D1 D2
C1 470/25V
[POWER BOARD]
120V/60Hz 240V/50Hz
PS-LX40P
DC 12V
* NOT REPLACEBLE: BUILT IN TRANSFORMER
SPEED 33 : 9.4 45 : 8.3
SW2
SPEED 45 RPM 33
SPEED 33 : 9.4 45 : 8.3
CARTRIDGE
WHT L-CH
RED R-CH
PHONO OUT

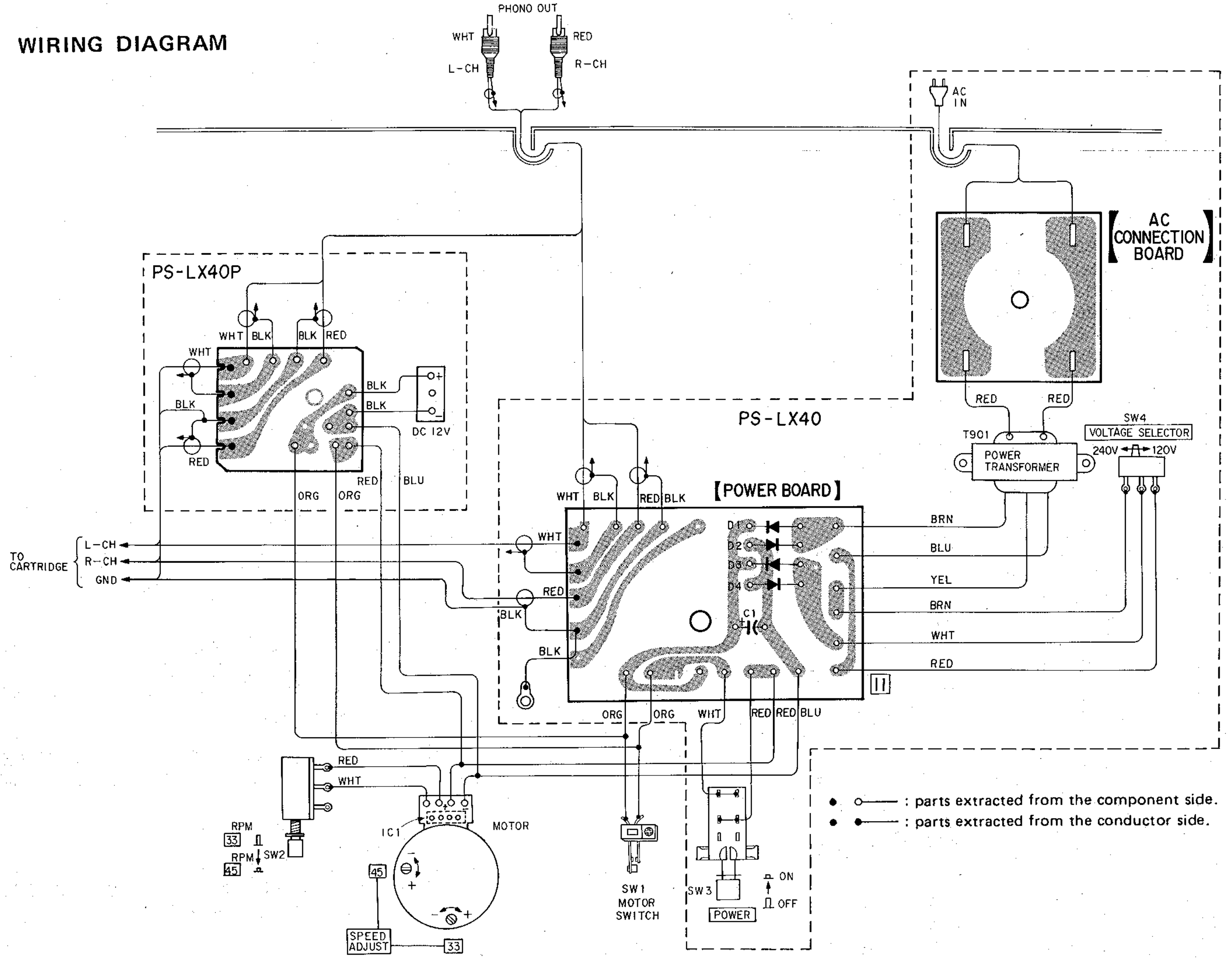
Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- Switches:

Ref. No.	Switch	Position
SW1	MOTOR	OFF
SW2	SPEED	33
SW3	POWER	OFF
SW4	VOLTAGE SELECTOR	240V

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

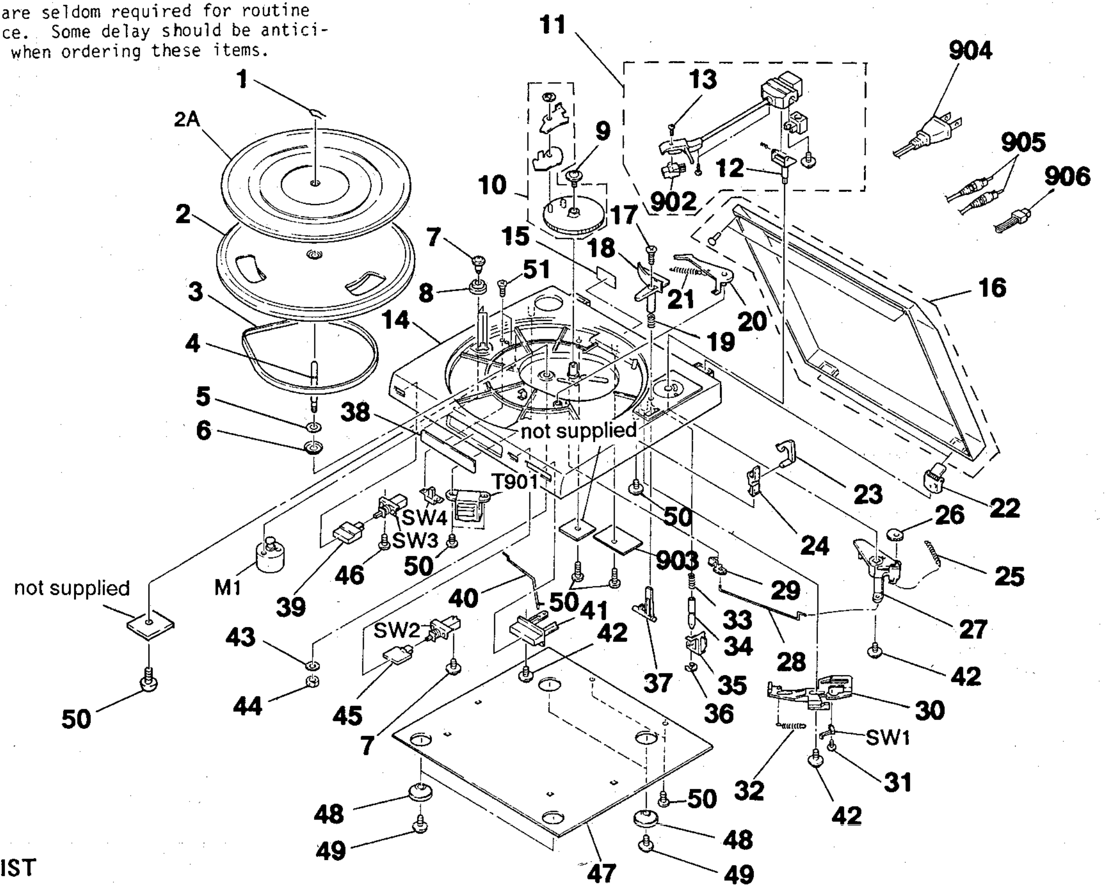
WIRING DIAGRAM


PHONO OUT
WHT L-CH
RED R-CH
AC IN
AC CONNECTION BOARD
PS-LX40P
WHT BLK BLK RED
WHT
BLK
RED
BLK
BLK
DC 12V
ORG ORG RED BLU
TO CARTRIDGE
L-CH
R-CH
GND
PS-LX40
[POWER BOARD]
WHT BLK RED BLK
WHT
RED
BLK
BLK
D1 D2 D3 D4
C1
ORG ORG WHT RED RED BLU
RED RED
T901 POWER TRANSFORMER
SW4 VOLTAGE SELECTOR
240V 120V
BRN BLU YEL BRN WHT RED
RED WHT
RPM 33
RPM 45 SW2
IC1
MOTOR
45
SPEED ADJUST
33
SW1 MOTOR SWITCH
SW3 POWER
ON OFF

- ○—— : parts extracted from the component side.
- ●—— : parts extracted from the conductor side.

EXPLODED VIEW

NOTE:
- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.



PARTS LIST

No.	Part No.	Description	Remarks
1	4-895-490-01	CLIP, SPINDLE	
2	A-4604-243-A	TURNTABLE ASSY (Platter)	
2A	4-896-518-01	MAT, TURNTABLE	
3	4-880-655-01	BELT	
4	4-896-361-01	SPINDLE	
5	4-895-024-01	POLY WASHER	
6	*4-895-404-01	SPINDLE WASHER	
7	7-685-646-79	SCREW, TA +BV3x8	
8	4-895-414-01	GROMMET (A)	
9	4-896-294-01	SCREW (7-BID 3006 ZN3A 10D)	
10	4-895-495-01	GEAR, CAM, CLUTCH	
11	A-4604-242-A	ARM ASSY	902
12	4-895-464-01	P.U. HINGE BRACKET	
13	7-627-553-98	SCREW, PRECISION +P2x8	
14	4-896-362-01	(LX40P:GRAY)....CABINET	
	4-896-387-01	(LX40)..........CABINET	
	4-896-504-01	(LX40P:WHITE)...CABINET	
15	*4-896-347-01	(LX40)...LABEL, MODEL NUMBER	
	*4-896-348-01	(LX40P)...LABEL, MODEL NUMBER	
	*4-896-348-11	(LX40P:West Germany) ...LABEL, MODEL NUMBER	
16	A-4620-041-A	COVER ASSY, DUST	
17	7-621-561-49	SCREW, +K2.6x12	
18	4-896-258-01	PLATFORM, LIFT	
19	4-896-267-01	SPRING (A)	
20	4-896-364-01	LEVER, REJECT	
21	4-896-365-01	SPRING (C)	
22	4-895-410-01	HINGE ASSY	
23	4-895-418-01	P.U. TUBE HOOK	
24	4-895-417-01	P.U. REST	
25	4-895-460-01	ADJUST SPRING	
26	4-895-818-01	ADJUST CAM	
27	*4-896-372-01	LINK, RETURN	
28	*4-896-371-01	ROD, TRIP	
29	4-896-304-01	LEVER, TRIP	
30	*4-896-373-01	ARM, SLIDE	
31	7-685-104-19	SCREW, +P2x6	
32	4-896-374-01	SPRING (SLIDE ARM)	
33	4-896-251-01	SPRING (B)	
34	4-896-252-01	SHAFT, ARM LIFT	
35	4-896-253-01	FORK, LIFT	
36	4-896-254-01	RING (DIA.3), E	
37	4-896-212-01	LEVER, CUE	
38	4-896-366-01	PANEL, FRONT	
39	4-896-388-01	(LX40)...BUTTON, POWER	
40	4-896-367-01	LOT (REJECT)	
41	4-896-368-01	(LX40/LX40P:GRAY)...BUTTON, STOP	
	4-896-398-01	(LX40P:WHITE).......BUTTON, STOP	
42	4-896-369-01	SCREW (7-CUP 3008 WF12 ZN3A)	
43	7-623-424-07	LW 5	
44	7-684-024-04	N 4	
45	4-896-370-01	(LX40/LX40P:GRAY)...BUTTON, SPEED	
	4-896-399-01	(LX40P WHITE).......BUTTON, SPEED	
47	4-896-376-01	PLATE, BOTTOM	
48	4-895-435-01	FOOT	
49	4-896-377-01	SCREW (7-CUP 3010 WF12 ZN3A)	
50	4-896-375-01	SCREW (7-CUP 3012 WF08 ZN3K)	
51	7-621-775-20	SCREW, +B2.6x5	

ELECTRICAL PARTS

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description
902	1-549-135-11	CARTRIDGE
903	- - -	(LX40)...PC BOARD, POWER
904	⚠ 1-555-795-00	(LX40:AEP, West Germany, Saudi Arabia) ....CORD, POWER, EULO PLUG
	⚠ 1-551-188-XX	(LX40:E)...CORD, POWER
905	1-555-116-11	CORD, CONNECTION
906	1-557-109-21	(LX40P)...CORD, CONNECTION (3 CORE)
C1	1-123-336-00	ELECT 470μF 25V
D1	8-719-200-02	(LX40)...DIODE 10E2
D2	8-719-200-02	(LX40)...DIODE 10E2
D3	8-719-200-02	(LX40)...DIODE 10E2
D4	8-719-200-02	(LX40)...DIODE 10E2
M1	A-4604-244-A	MOTOR ASSY
SW1	1-570-666-11	SWITCH, LEAF
SW2	1-571-089-11	SWITCH, PUSH (1 KEY) (SPEED)
SW3	1-571-560-11	(LX40)...SWITCH, PUSH (1 KEY) (POWER)
SW4	⚠ 1-571-088-11	(LX40)...SWITCH, SLIDE (VOLTAGE SELECTOR)
T901	⚠ 1-449-291-11	(LX40)...TRANSFORMER, POWER

ACCESSORY & PACKING MATERIAL

Part No.	Description
3-701-806-00	ADAPTOR, 45
3-750-345-11	(LX40)...MANUAL, INSTRUCTION (English, French, Spanish)
4-896-513-01	(LX40)...INDIVIDUAL CARTON

9-953-701-11

Sony Corporation
Audio Group

English
89G0956-1
Printed in Japan
© 1989. 7

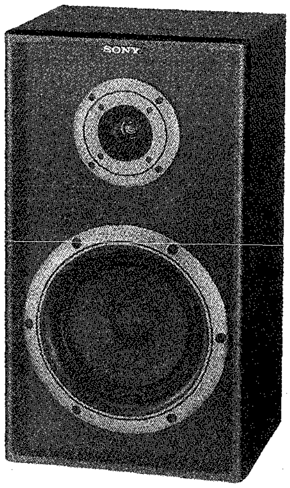
SS-A301

SERVICE MANUAL

AEP Model

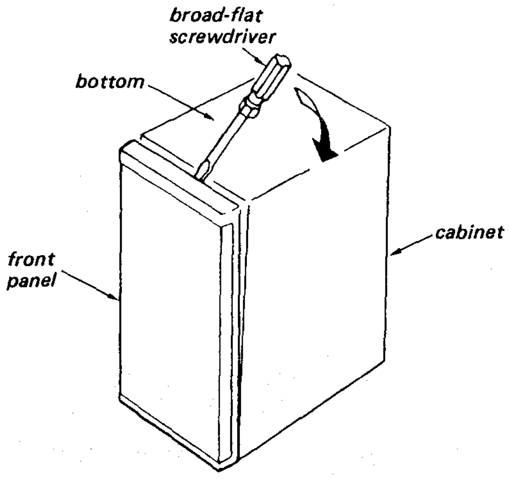
SPECIFICATIONS

Speaker system	2-way speaker system
Speaker units	Woofer:16cm, cone type Tweeter:6.5cm, cone type
Enclosure type	Acoustic suspension
Power handling capacity	Music 60W
Sensitivity	88dB (1W, 1m),
Frequency range	50-20,000 Hz
Nominal impedance	6 ohms
Dimensions	Approx. 236x419x192mm(w/h/d)
Weight	Approx. 4.1 kg per speaker, net



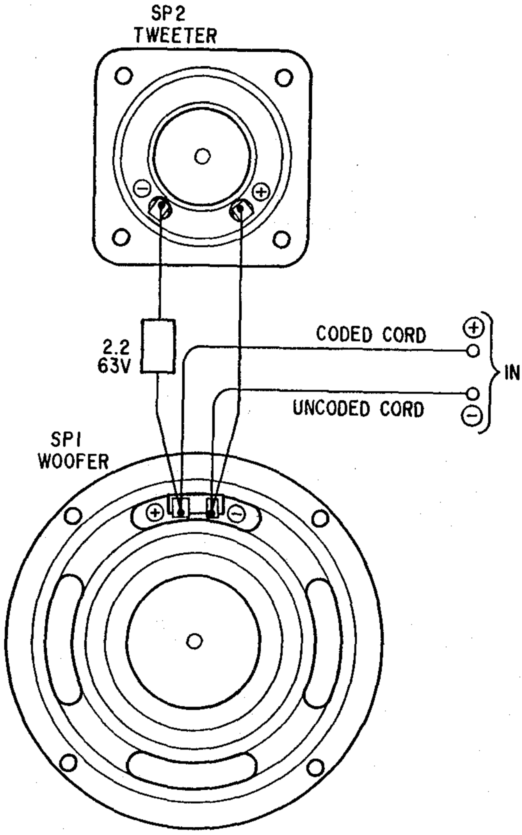
This set is the speaker system in XO-D301.

1. FRONT PANEL REMOVAL


broad-flat screwdriver
bottom
cabinet
front panel

Note: Be careful not to scratch the cabinet.

2. WIRING DIAGRAM


SP2 TWEETER
⊖
⊕
2.2 63V
CODED CORD
⊕
INPUT
UNCODED CORD
⊖
SP1 WOOFER
⊕
⊖

MICROFILM

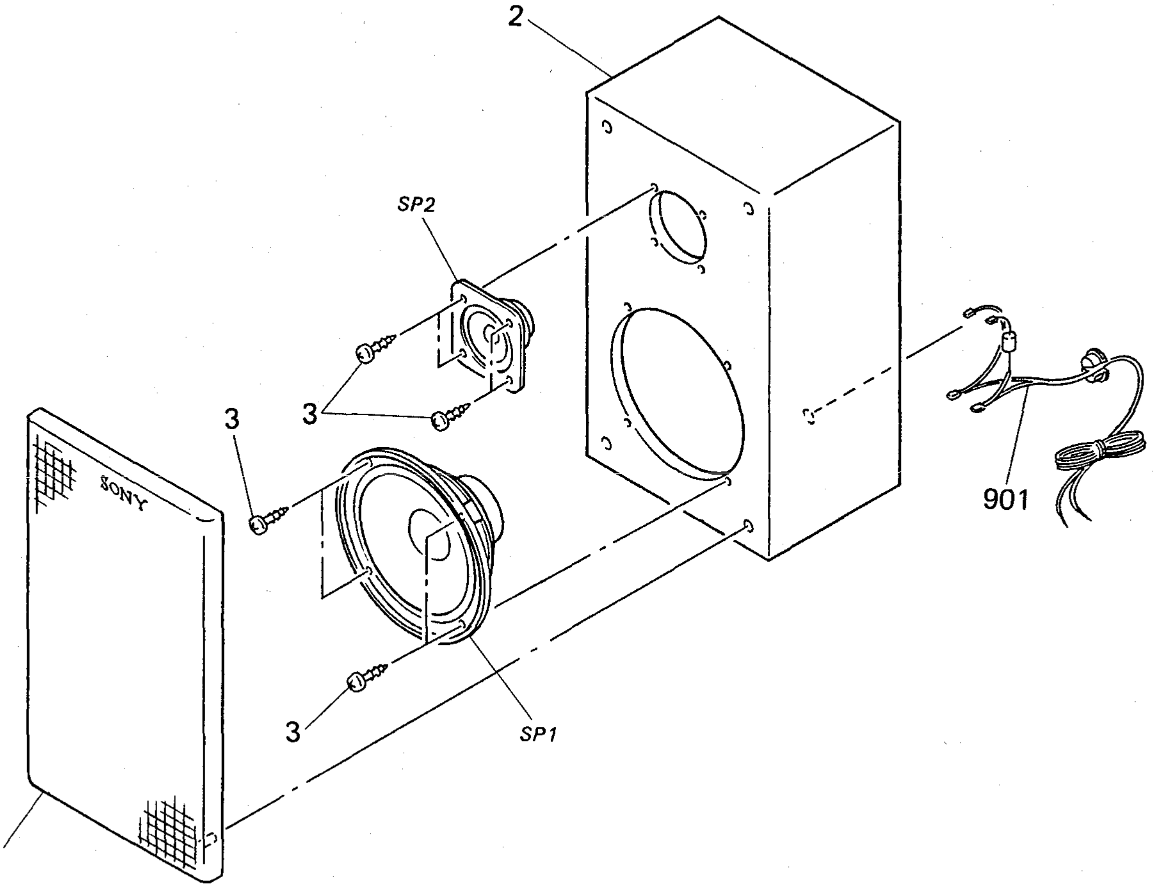
SPEAKER SYSTEM

SONY®

3. EXPLODED VIEW AND PARTS LIST

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.



No.	Part No.	Description
1	T-8150-325-A	PANEL ASSY, FRONT
2	T-8151-058-1	SPEAKER BOX
3	T-8150-573-1	TAPPING SCREW +P4.2X16

ACCESSORY & PACKING MATERIAL

Part No.	Description
T-8151-068-1	(AEP)···MANUAL, INSTRUCTION

ELECTRICAL PARTS

Ref.No.	Part No.	Description
901	T-8150-324-A	WIRE KIT ASSY
SP1	T-8110-421-1	WOOFER
SP2	T-8110-424-1	TWEETER

Sony Corporation
Audio Group

English
89C0436-1
Printed in Japan
©1989. 3
Published by A/V Engineering Service Dept.

SS-A701

SERVICE MANUAL

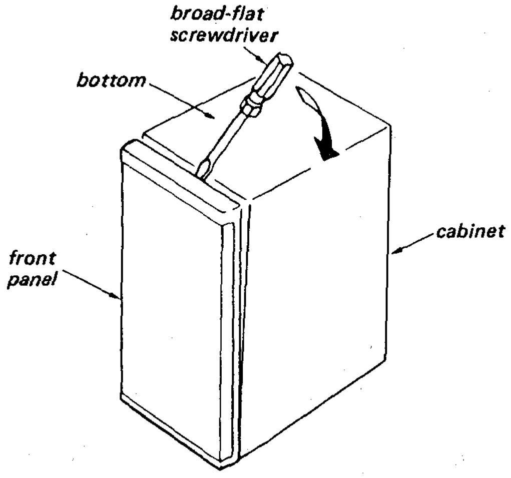
AEP Model

SPECIFICATIONS

Speaker system	3-way speaker system
Speaker units	Woofer:16cm, cone type Midrange:6.5cm, cone type Tweeter:1.6cm, dome type
Enclosure type	Acoustic suspension
Power handling capacity	Music 120W
Sensitivity	88dB (1W, 1m), 6.3W (96dB, 1m)
Frequency range	45-20,000 Hz
Nominal impedance	6 ohms
Dimensions	Approx. 238x429x192mm(w/h/d)
Weight	Approx. 4.4 kg per speaker, net Approx. 10.1 kg in shipping carton

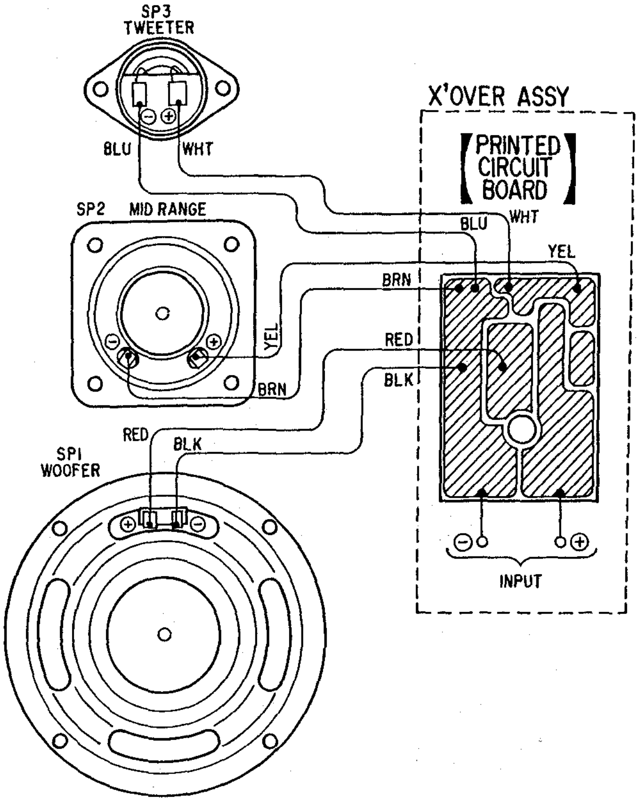
This set is the speaker system in XO-D501.

1. FRONT PANEL REMOVAL


broad-flat screwdriver
bottom
cabinet
front panel

Note: Be careful not to scratch the cabinet.

2. WIRING DIAGRAM


SP3 TWEETER
BLU
WHT
X'OVER ASSY
PRINTED CIRCUIT BOARD
SP2 MID RANGE
BLU
WHT
YEL
BRN
YEL
RED
BLK
BRN
RED
BLK
SP1 WOOFER
INPUT

SPEAKER SYSTEM

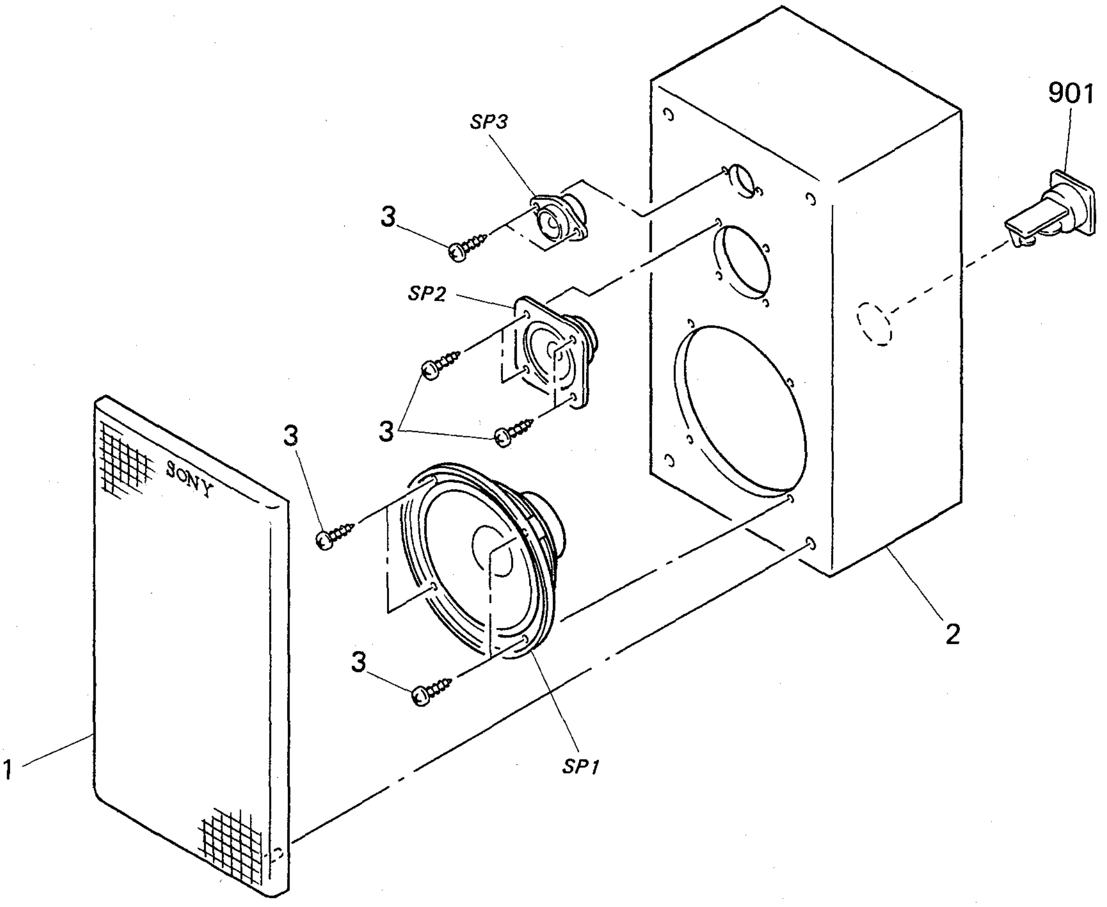
SONY

MICROFILM

3. EXPLODED VIEW AND PARTS LIST

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.



No.	Part No.	Description
1	T-8150-327-A	PANEL ASSY, FRONT
2	T-8151-072-1	SPEAKER BOX
3	T-8150-573-1	TAPPING SCREW +P4.2X16

ACCESSORY & PACKING MATERIAL

Part No.	Description
T-8151-082-1	(AEP)···MANUAL, INSTRUCTION

ELECTRICAL PARTS

Ref.No.	Part No.	Description
901	T-8150-329-A	X'OVER ASSY
SP1	T-8110-422-1	WOOFER
SP2	T-8110-425-1	MIDRANGE
SP3	1-544-135-21	TWEETER

English
89C0436-1
Printed in Japan
©1989.3

9-953-717-11

Sony Corporation
Audio Group

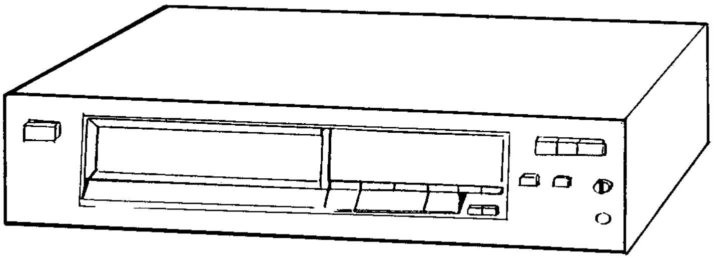
Published by A/V Engineering Service Dept.

CDP-M27/M47

SERVICE MANUAL

Canadian Model
AEP Model
E Model
CDP-M27

AEP Model
UK Model
CDP-M47



CDP-M27

SPECIFICATIONS

System	Compact disc digital audio system
Laser	Semiconductor laser (λ=780nm)
Emission duration	Continuous
Frequency resphonse	2Hz – 20,000Hz (±1dB)
Signal-to-noise ratio	More than 90dB
Harmonic distortion	Less than 0.09%
Wow and flutter	Below measurable limit
Output	LINE OUT (phono jacks) Output level 2V (at 50kilohms) Load impedance over 10kilohms
Channel separation	More than 95dB (1kHz)
General	
Power requirement	AEP model (CDP-M27/M47) 220V AC, 50/60Hz UK model (CDP-M27/M47) 240V AC, 50/60Hz Canadian model (CDP-M27) 120V AC, 60Hz E, Saudi Arabla model (CDP-M27) 110 – 120V or 220 – 240V, adjustable, 50/60Hz
Power consumption	10W, 12W (Canadian model)
Dimensions	approx. 355x80x275mm (w/h/d) (14x3¼x10 inches) including projecting parts and controls
Weight	approx. 3.0kg (6 lbs 10oz) (net)

Supplied accessories

Audio signal connecting cord (2 phono plugs – 2 phono plugs) (1)

For CDP-M47 only:
Remote commander (1), Sony SUM-3 (MS) batteries (2)

For CDP-M27/M47:
AC power cord (1)

Note: · CDP-M27 are not supplied with a remote commander.

MICROFILM

TABLE OF CONTENTS

Section *Title* *Page*

Specifications 1
Servicing Note 2

SECTION 1. GENERAL
1-1. Location and Function of Controls. . . 3
1-2. Circuit Description 4

SECTION 2. ADJUSTMENTS 6

SECTION 3. DIAGRAMS
3-1. Waveforms 9
3-2. Semiconductor Lead Layouts 10
3-3. Printed Wiring Boards 11
3-4. Schematic Diagram 13
3-5. IC Block Diagrams 16

SECTION 4. EXPLODED VIEWS 18

SECTION 5. ELECTRICAL PARTS LIST . . . 20

COMPACT DISC PLAYER

SONY®

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SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs a laser. Therefore, be sure to follow carefully the instructions below when servicing.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

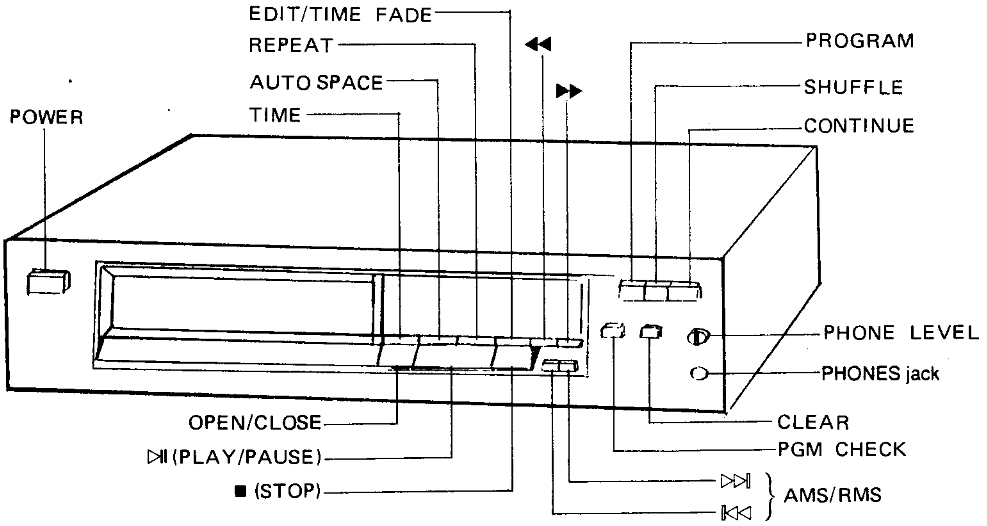
1. Laser Diode Properties
   - Material: GaAlAs
   - Wavelength: 780 nm
   - Emission Duration: continuous
   - Laser Output: max. 44.6 μW*

     * This output is the value measured at a distance of about 200 mm from the objective lens surface on the Optical Pick-up Block.

2. During service, do not take the Optical Pick-up Block apart, and do not adjust the APC circuit. If there is a breakdown in the APC circuit (including laser diode), replace the entire Optiocal Pick-up Block (including APC borad).

SECTION 1
GENERAL

1-1. LOCATION AND FUNCTION OF CONTROLS


EDIT/TIME FADE
REPEAT
AUTO SPACE
TIME
POWER
◀◀
▶▶
PROGRAM
SHUFFLE
CONTINUE
PHONE LEVEL
PHONES jack
OPEN/CLOSE
▷II (PLAY/PAUSE)
■ (STOP)
CLEAR
PGM CHECK
▷▷I
I◁◁
AMS/RMS

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

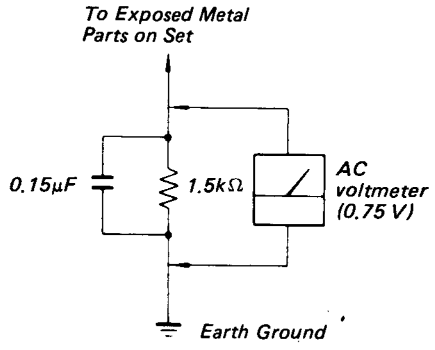

To Exposed Metal
Parts on Set
0.15μF
1.5kΩ
AC
voltmeter
(0.75 V)
Earth Ground

Fig. A. Using an AC voltmeter to check AC leakage.

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1-2. DESCRIPTION OF IC6 (MSC6458) SYSTEM CONTROL MICROCOMPUTER

IC6 has the following functions:

- Digital signal output to operation key
- Sub Q signal loading and processing
- Fluorescent display (FLD) control
- Servo circuit control

Pin Function of IC6

Pin no.	Pin name	I/O	Description
1	PLL SW	O	"L" in play mode and "H" in search mode.
2	CLK	O	Command transfer of clock to SSP (IC3) and DSP (IC7).
3	DATA	O	Command transfer of data to SSP (IC3) and DSP (IC7).
4	XLK	O	Command transfer of latch to SSP (IC3) and DSP (IC7).
5	PRGL	O	Command transfer of latch to DFIL (IC9).
6	SYNC OUT	O	No connector (NC).
7	SENSE	I	SSP (IC2) and DSP (IC3) sense information.
8	SYNC ON	I	Sync REC ("L" in REC mode).
9	SIRCS	I	Remote control signal input.
10	SCOR	I	Q code read timing.
11	AF ADJ	I	No connection (NC)
12	ADJ	I	"L" in test mode.
13	AMUTE	O	ALL muting. Output to DSP (IC3) MUTG.
14	EMPS	O	No connection (NC)
15	SUBQ	I	Subcode data.
16	SQCLK	O	Subcode data read clock.
17	GFS	I	"H" when CLV is locked.
18	FOK	I	"H" when focus is on.
19	KEY0	I	Key matrix input, "H" active.
20	KEY1	I	Key matrix input, "H" active.
21	KEY2	I	Key matrix input, "H" active.
22	KEY3	I	Key matrix input, "H" active.
23	KEY4	I	Key matrix input, "H" active.
24	KEY5	I	Key matrix input, "H" active.
25	INSW	I	Loading IN SW.
26	LDON	O	Laser on / off.
27	OUTSW	I/O	Loading OUT SW.
28	LODOUT	O	Loading motor control.
29	LODIN	O	Loading motor control.
30	OSC1	I	Oscillator input terminal (4 MHz).
31	OSC0	I	Oscillator input terminal (4 MHz).

Pin No.	Pin name	I/O	Descriprion
32	GND	_	GND terminal.
33	RESET	I	Reset input terminal. Input when power is turned on.
34	TEST	_	No connection (NC).
35	VL DOWN	_	No connection (NC).
36	VL UP	O	Volume up.
37	TIMER	O	No connection (NC).
38	LED	O	Volume indicator.
39	8G	O	FLD timing output.
40	7G	O	FLD timing output.
41	6G	O	FLD timing output.
42	5G	O	FLD timing output.
43	4G	O	FLD timing output.
44	3G	O	FLD timing output.
45	2G	O	FLD timing output.
46	1G	O	FLD timing output.
47	NC	_	No connection (NC).
48	o	O	FLD segment output.
49	n	O	FLD segment output.
50	m	O	FLD segment output.
51	+ 30V	_	+ 30V
52	l	O	FLD segment output.
53	k	O	FLD segment output.
54	j	O	FLD segment output.
55	i	O	FLD segment output.
56	h	O	FLD segment output.
57	g	O	FLD segment output.
58	f	O	FLD segment output.
59	e	O	FLD segment output.
60	d	O	FLD segment output.
61	c	O	FLD segment output.
62	b	O	FLD segment output.
63	a	O	FLD segment output.
64	VDD	_	positive(+) power supply (5V)

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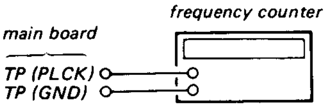
SECTION 2
ADJUSTMENTS

ELECTRICAL ADJUSTMENTS

1. Perform adjustments in the order given.
2. Use YEDS-18 (Part No. 3-702-101-01) disc unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.

RF PLL Frequency Adjustment/Lock Frequency Check

Procedure:

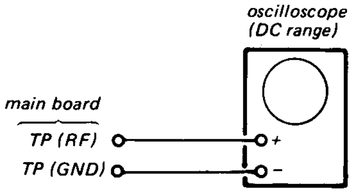


1. Ground test point TP (ASY).
2. Connect the frequency counter to the test points TP (PCK) and TP (GND).
3. Turn POWER switch on.
4. Adjust RV4 so that the reading on the frequency counter is 4.3218MHz.
   ... (RF PLL frequency adjustment)
5. Remove the grounding wire from TP (ASY).
6. Put the disc (YEDS-18) in and press ▷ button.
7. Confirm that the reading on the frequency counter is locked at 4.3218 MHz.

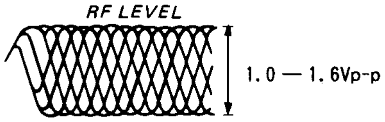
Focus Bias Adjustment

This adjustment should be made after replacing the Optical Pick-up Block.

Procedure:



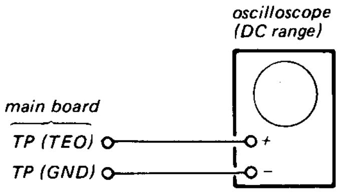
1. Connect oscilloscope to the test points TP (RF) and TP (GND).
2. Turn POWER switch on.
3. Put the disc (YEDS-18) in and press ▷ button.
4. Adjust RV2 for an optimum waveform eye pattern. Optimum eye pattern means that shape "◇" can be clearly distinguished at the center of the waveform.



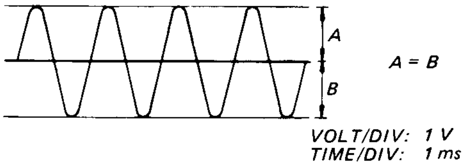
E-F Balance Adjustment

This adjustment should be made after replacing the Optical Pick-up Block.

Procedure:



1. Connect the oscilloscope to the test points TP (TEO) and TP (GND).
2. Ground TP (ADJ) to set an adjustment mode.
3. Turn POWER switch on.
4. Put the disc (YEDS-18) in and press ▷ button.
5. Adjust RV1 so that the traverse waveform is symmetrical above and below.
6. After adjustment, cancel the adjustment mode.



Focus/Tracking Gain Adjustment

A frequency response analyzer is necessary in order to perform this adjustment exactly.

However, this gain has a margine, so even if it is slightly off, there is no problem. Therefore, this adjustment is not recomended generally to be performed.

Focus/tracking gains determine the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when the 2-axis device operate.

However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise when the 2-axis device operates increases.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.
- When gain adjustment is off, the symptoms below appear.

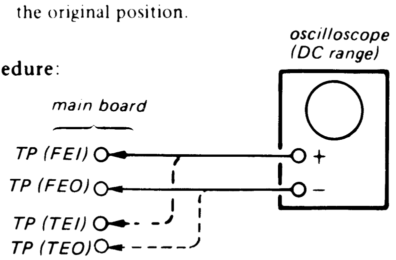
Gain / Symptoms	Focus	Tracking
• The time until music starts becomes longer for STOP →▷PLAY or automatic selection (⏮, ⏭ buttons pressed. (Normally takes about 2 seconds.)	low	low or high
• Music does not start and disc continues to rotate for STOP→▷PLAY or automatic selection (⏮, ⏭ buttons pressed.)		low
• Disc table opens shortly after STOP→▷PLAY.	low or high	
• Sound is interrupted during PLAY. Or time counter display stops progressing.		low
• More poise during 2-axis device operation.	high	high

The following is a simple adjustment method.

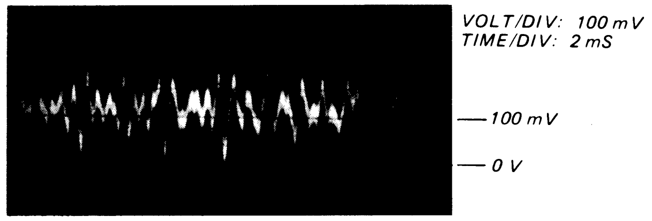
Simple Adjustment

Note: Since exact adjustment cannot be performed, remember the positions of the controls before performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

Procedure:

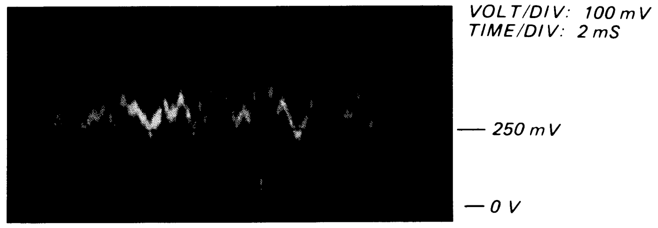

oscilloscope
(DC range)
main board
TP (FEI)
TP (FEO)
TP (TEI)
TP (TEO)
+
–

1. Keep the set flat.
   If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2 axis device.
2. Insert the disc (YEDS-18) and press ▷ PLAY button.
3. Connect the oscilloscope to TP (FEI) and TP (FEO).
4. Adjustment RV3 so that the waveform is as shown in the picture below. (focus gain adjustment)

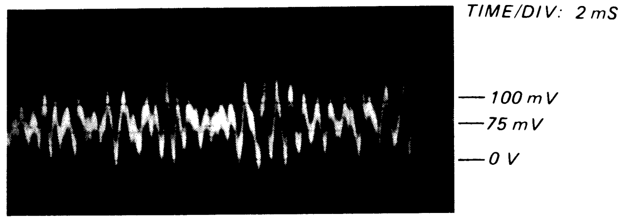

VOLT/DIV: 100 mV
TIME/DIV: 2 mS
100 mV
0 V

- Incorrect Examples (DC level is quite different from the adjusted waveform) (below)

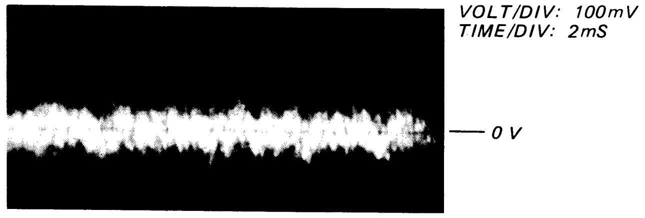
low focus gain


VOLT/DIV: 100 mV
TIME/DIV: 2 mS
250 mV
0 V

high focus gain

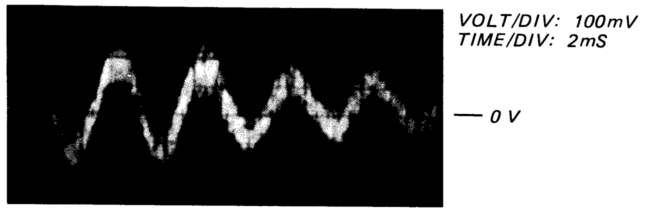

VOLT/DIV: 100
TIME/DIV: 2 mS
100 mV
75 mV
0 V

5. Connect the oscilloscope to TP (TEI), TP (TEO).
6. Adjust RV4 so that the waveform is as shown in the picture below. (tracking gain adjustment)

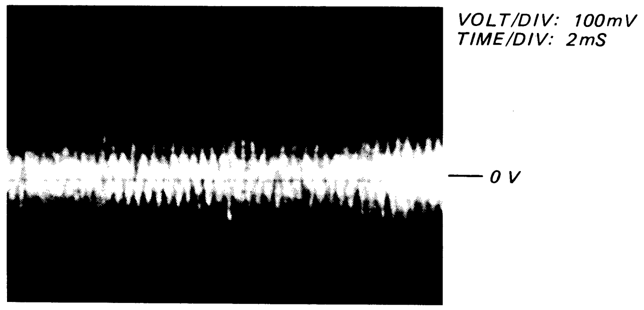

VOLT/DIV: 100mV
TIME/DIV: 2mS
0 V

- Incorrect Examples (fundamental wave appears)

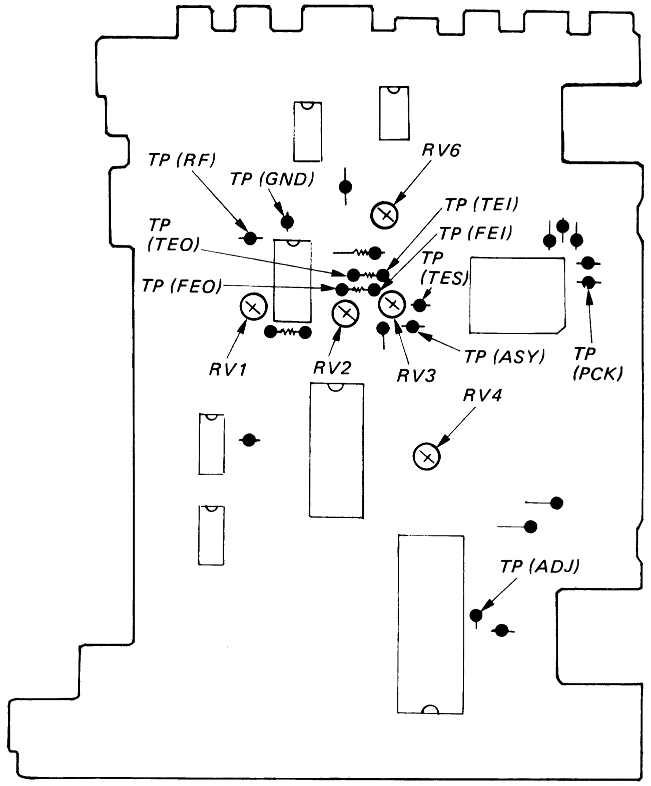
low tracking gain


VOLT/DIV: 100mV
TIME/DIV: 2mS
0 V

high tracking gain
(higher frequency of the fundamental wave than above)


VOLT/DIV: 100mV
TIME/DIV: 2mS
0 V

Adjustment Location: main board


TP (RF)
TP (GND)
RV6
TP (TEI)
TP (FEI)
TP (TEO)
TP (FEO)
TP (TES)
RV1
RV2
RV3
TP (ASY)
TP (PCK)
RV4
TP (ADJ)

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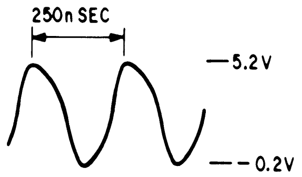
SECTION 3
DIAGRAMS

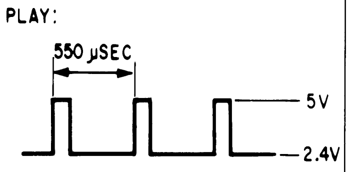
3-1. WAVEFORMS

① OSCI



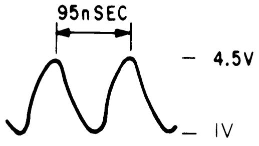
250n SEC
5.2V
0.2V

② MDP



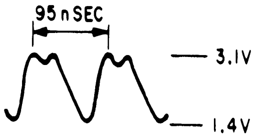
PLAY:
550 μSEC
5V
2.4V

③ VCO I



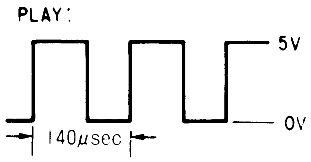
95nSEC
4.5V
IV

④ VCO O



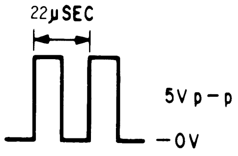
95nSEC
3.1V
1.4V

⑤ MDS



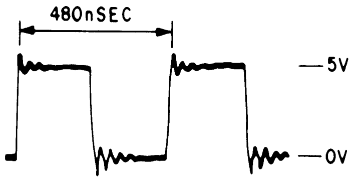
PLAY:
5V
0V
140μsec

⑥ WDCK



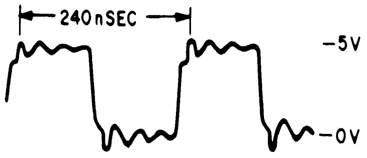
22μSEC
5Vp-p
0V

⑦ C210



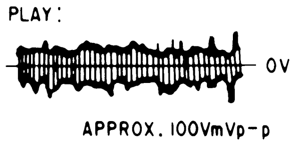
480nSEC
5V
0V

⑧ BCK



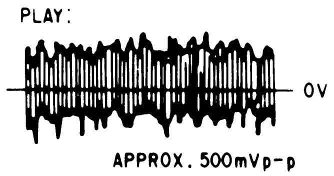
240nSEC
-5V
0V

⑨ FE



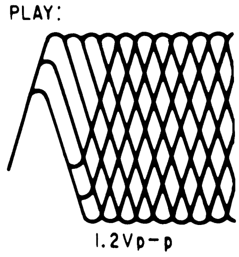
PLAY:
0V
APPROX. 100VmVp-p

⑩ TE

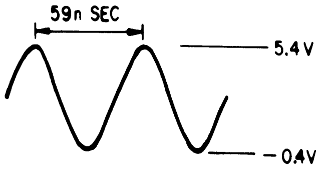


PLAY:
0V
APPROX. 500mVp-p

⑪ RF



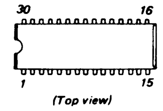
⑫ XTAL



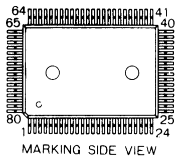
59n SEC
5.4V
0.4V

3-2. SEMICONDUCTOR LEAD LAYOUTS

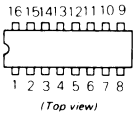
CXA1081S


30
16
1
15
(Top view)

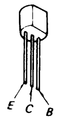
CXD1125Q


64
41
65
40
80
25
1
24
MARKING SIDE VIEW

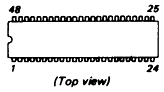
M5294P


16 15 14 13 12 11 10 9
1 2 3 4 5 6 7 8
(Top view)

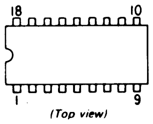
2SB1013



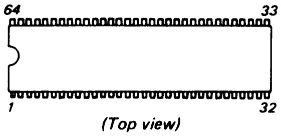
CXA1082BS


48
25
1
24
(Top view)

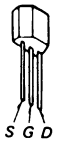
CXD2550P


18
10
1
9
(Top view)

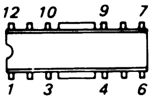
MSC6458-32SS


64
33
1
32
(Top view)

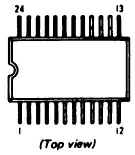
2SK381C



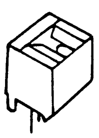
CXA-1291P


12 10 9 7
1 3 4 6

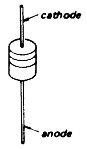
CXK5816M-12L


24
13
1
12
(Top view)

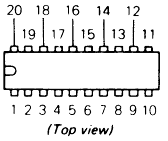
GP1U52



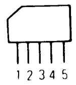
HZS6.8ES-B2
1SS202-1


cathode
anode

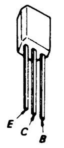
CXD1161P-3
M5204P


20 18 16 14 12
19 17 15 13 11
1 2 3 4 5 6 7 8 9 10
(Top view)

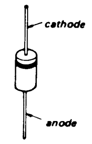
M5231TL



DTC114ES
DTC144ES



10E2


cathode
anode

• SEMICONDUCTOR LOCATION

Ref. No.	Location	Ref. No.	Location
D1	I-7	IC6	I-4
D3	J-8	■IC7	E-3
D4	J-8	■IC8	D-4
D5	J-8	IC9	D-3
D6	D-7	IC10	C-3
D7	D-7	IC11	B-4
D8	D-7	IC12	B-7
D9	C-7	IC13	H-9
D10	B-7		
		Q1	C-7
IC1	C-5	Q2	E-6
IC2	E-6	Q3	G-3
IC3	G-5	Q4	G-3
IC4	G-7	Q5	H-4
IC5	H-7	Q6	H-4

Note:
- ○— : parts extracted from the component side.
- ●— : parts extracted from the conductor side.
- ○┬○ ⏚ : Jumper wire connected to the ground pattern on the component side.

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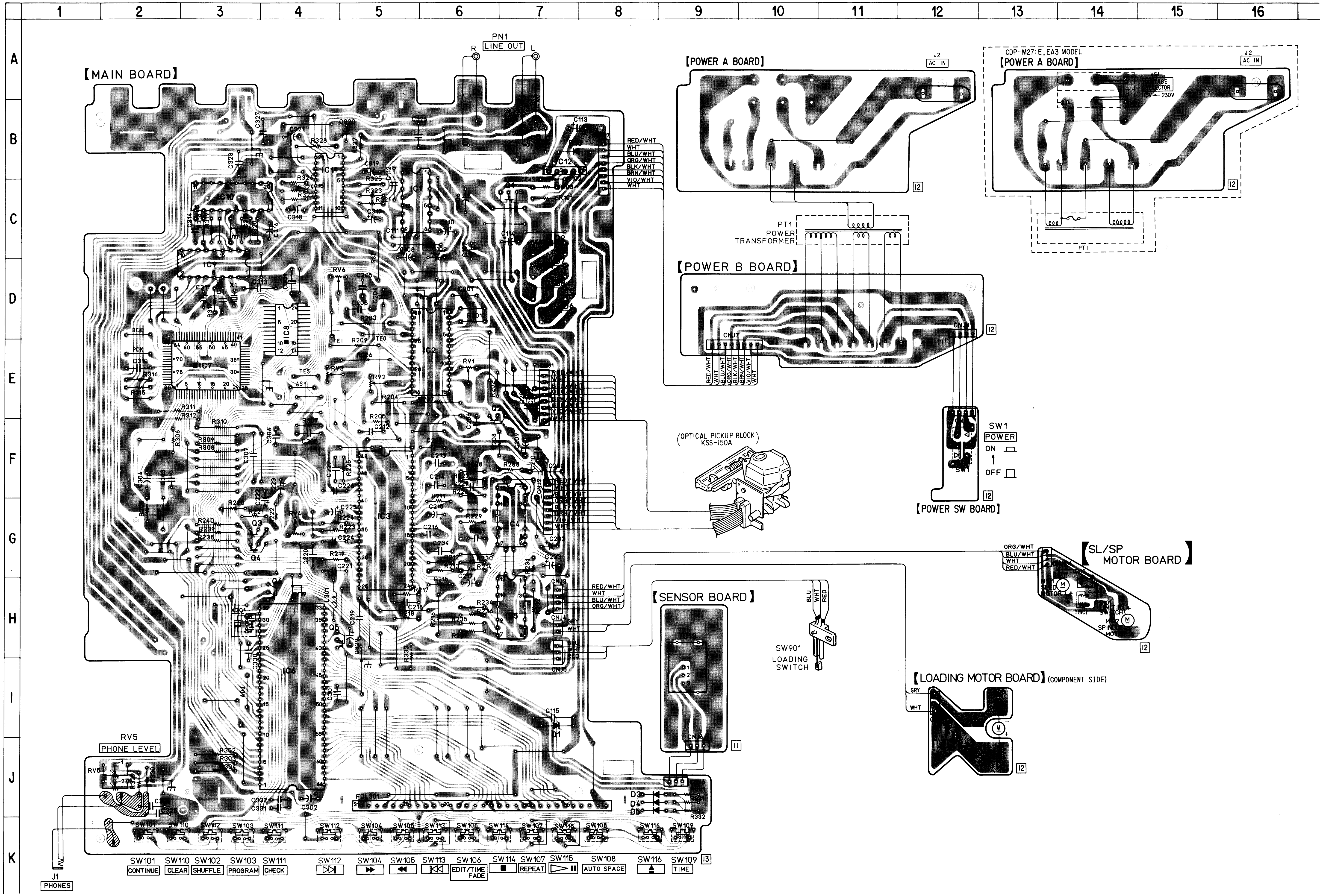
3-3. PRINTED WIRING BOARDS



1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
K
PN1
LINE OUT
R
L
【MAIN BOARD】
【POWER A BOARD】
J2
AC IN
CDP-M27: E, EA3 MODEL
【POWER A BOARD】
VS1
VOLTAGE SELECTOR
230V
PT1
POWER TRANSFORMER
【POWER B BOARD】
CN1
RED/WHT
WHT
BLU/WHT
ORG/WHT
BLK/WHT
BRN/WHT
VIO/WHT
SW1
POWER
ON
OFF
【POWER SW BOARD】
(OPTICAL PICKUP BLOCK KSS-150A)
【SL/SP MOTOR BOARD】
ORG/WHT
BLU/WHT
WHT
RED/WHT
M901 SLED MOTOR
M902 SPINDLE MOTOR
S1001 LIMIT SWITCH
【SENSOR BOARD】
IC13
CN16
BLU
WHT
RED
SW901
LOADING SWITCH
【LOADING MOTOR BOARD】(COMPONENT SIDE)
GRY
WHT
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC10
IC11
IC12
RV1
RV2
RV3
RV4
RV5
RV6
TE1
TE0
TES
ASY
RCK
PCK
FDL301
D1
D3
D4
D5
C115
R332
RV5
PHONE LEVEL
J1
PHONES
SW101
CONTINUE
SW110
CLEAR
SW102
SHUFFLE
SW103
PROGRAM
SW111
CHECK
SW112
SW104
SW105
SW113
SW106
EDIT/TIME FADE
SW114
SW107
REPEAT
SW115
SW108
AUTO SPACE
SW116
SW109
TIME
11
12
13

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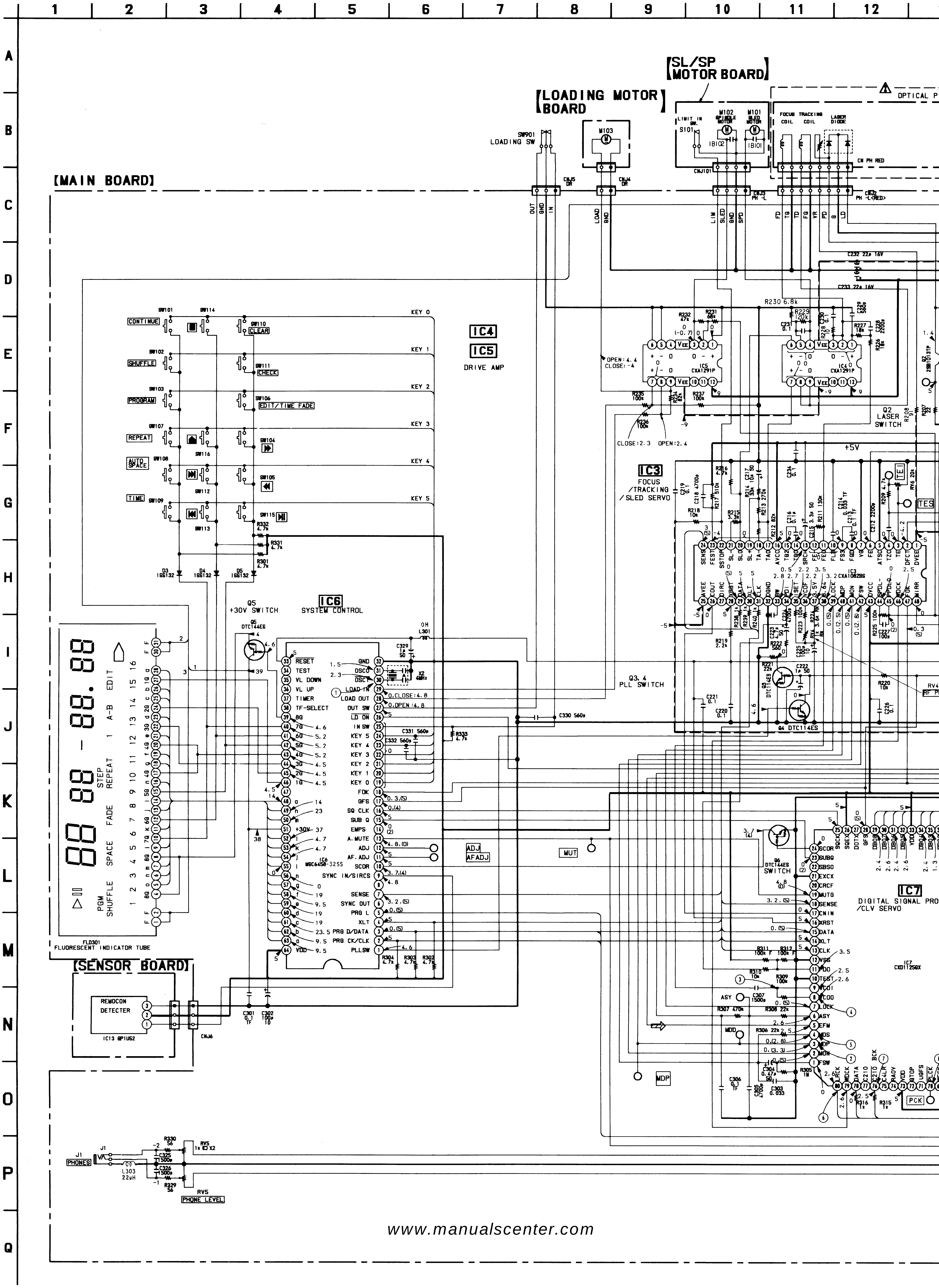
[SL/SP MOTOR BOARD]
[LOADING MOTOR BOARD]
OPTICAL P
[MAIN BOARD]
M103
SW901 LOADING SW
S101 LIMIT IN SW.
M102 SPINDLE MOTOR
M101 SLED MOTOR
FOCUS COIL
TRACKING COIL
LASER DIODE
CN PH RED
CNJ5 DR
CNJ4 DR
CNJ3 PH-L
CNJ2 PH-L<RED>
CNJ101
OUT GND IN
LOAD GND
LIM SLED GND SPD
FD TG TD FG VR PD G LD
IC4
IC5
DRIVE AMP
IC5 CXA1291P
IC4 CXA1291P
OPEN:4.4 CLOSE:-4
CLOSE:2.3 OPEN:2.4
Q2 LASER SWITCH
IC3 FOCUS /TRACKING /SLED SERVO
IC3 CXA1082BS
+5V
TE
TES
Q3, 4 PLL SWITCH
Q3 DTC114ES
Q4 DTC114ES
RF P
CONTINUE
SHUFFLE
PROGRAM
REPEAT
AUTO SPACE
TIME
CLEAR
CHECK
EDIT/TIME FADE
KEY 0
KEY 1
KEY 2
KEY 3
KEY 4
KEY 5
D3 1SS132
D4 1SS132
D5 1SS132
Q5 +30V SWITCH
Q5 DTC144ES
IC6 SYSTEM CONTROL
IC6 MSC6458-32SS
RESET TEST VL DOWN VL UP TIMER TF-SELECT
GND OSCO OSCI LOAD IN LOAD OUT OUT SW LD ON IN SW
KEY 5 KEY 4 KEY 3 KEY 2 KEY 1 KEY 0
FOK GFS SQ CLK SUB Q EMPS A.MUTE ADJ AF.ADJ SCOR SYNC IN/SIRCS SENSE SYNC OUT PRG L XLT PRG D/DATA PRG CK/CLK PLLSW
X2 4MHz
ADJ
AFADJ
MUT
MDP
FLD301 FLUORESCENT INDICATOR TUBE
PGM SHUFFLE SPACE FADE STEP REPEAT 1 A-B EDIT
[SENSOR BOARD]
REMOCON DETECTER
IC13 GP1U52
CNJ6
Q6 DTC144ES SWITCH
IC7 DIGITAL SIGNAL PRO /CLV SERVO
IC7 CXD1125QX
SQCK SQEX DOTX GFS
ASY
MDD
PCK
J1 PHONES
L303 22uH
RV5 1k X2
RV5 PHONE LEVEL
1 2 3 4 5 6 7 8 9 10 11 12
A B C D E F G H I J K L M N O P Q

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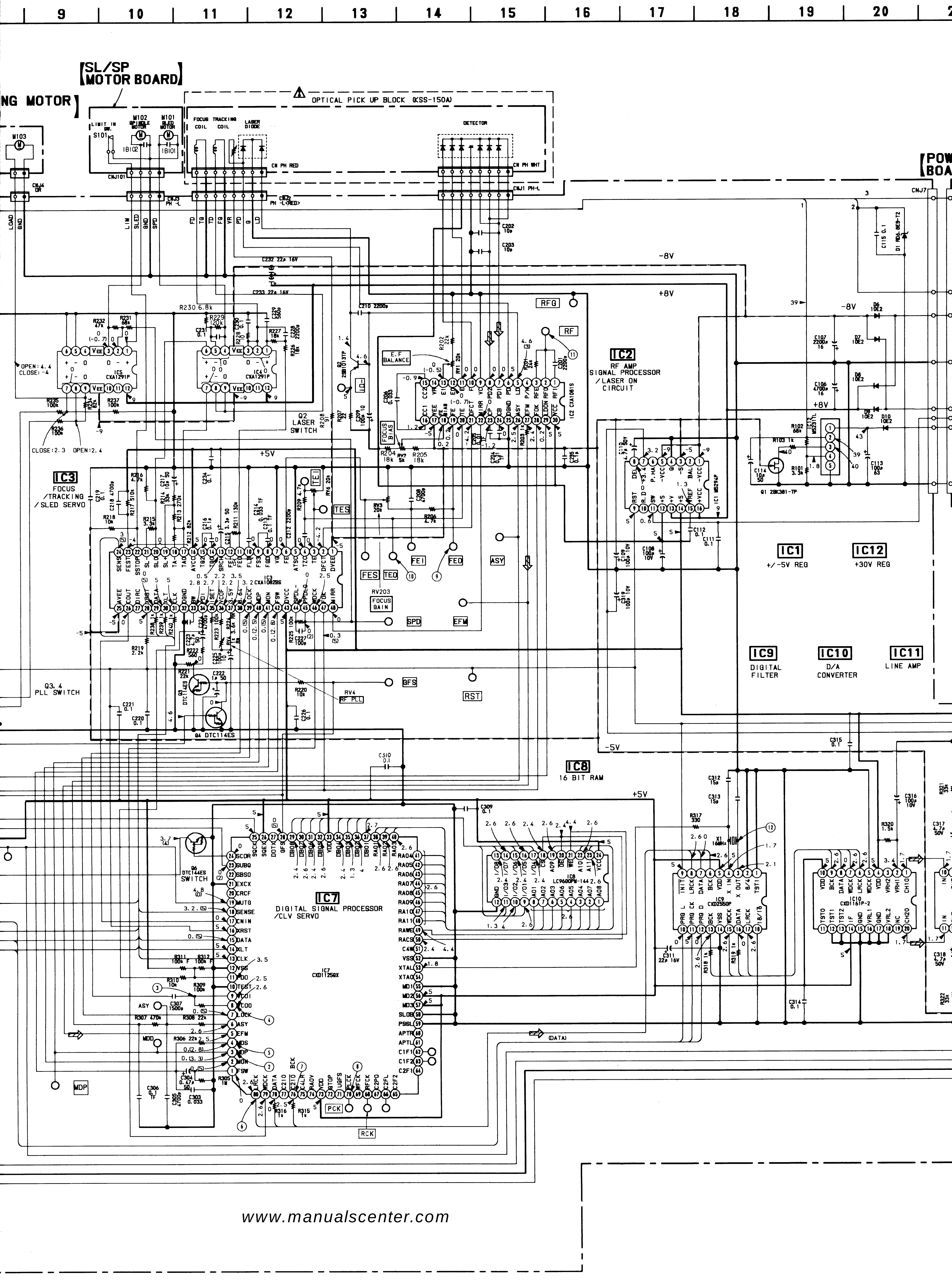
9
10
11
12
13
14
15
16
17
18
19
20
SL/SP MOTOR BOARD
NG MOTOR
OPTICAL PICK UP BLOCK (KSS-150A)
FOCUS COIL
TRACKING COIL
LASER DIODE
DETECTOR
M103
M102 SPINDLE MOTOR
M101 SLED MOTOR
LIMIT IN SW.
S101
CNJ101
CN PH RED
CN PH WHT
CNJ1 PH-L
CNJ2 PH-L (RED)
CNJ3 PH-L
CNJ4 DR
LOAD
GND
LIM
SLED
GND
SPD
FD
TG
TD
FG
VR
PD
G
LD
C202 10p
C203 10p
C232 22μ 16V
C233 22μ 16V
-8V
+8V
R230 6.8k
RFG
RF
IC2
RF AMP
SIGNAL PROCESSOR
/LASER ON
CIRCUIT
IC2 CXA1081S
E.F BALANCE
RV1 20k
FOCUS BIAS
RV2 5k
R204 18k
R205 18k
Q2 LASER SWITCH
Q2 2SB1073TP
LD
IC5 CXA1291P
IC4 CXA1291P
OPEN:4.4
CLOSE:-4
CLOSE:2.3
OPEN:2.4
R235 100k
R236 100k
R237 100k
IC3
FOCUS
/TRACKING
/SLED SERVO
IC3 CXA1082BS
+5V
TE
TES
FEI
FEO
FES
TEO
ASY
RV3 20k
R206 4.7k
RV203 FOCUS GAIN
SPD
EFM
GFS
RST
RV4 RF PLL
Q3, 4 PLL SWITCH
Q3 DTC114ES
Q4 DTC114ES
C221 0.1
C220 0.1
-5V
C310 0.1
IC8
16 BIT RAM
IC8 LC9600PM-14
+5V
IC7
DIGITAL SIGNAL PROCESSOR
/CLV SERVO
IC7 CXD1125QX
Q6 DTC144ES SWITCH
ASY
MDD
MDP
PCK
RCK
(DATA)
IC1
+/-5V REG
IC12
+30V REG
IC1 M5294P
IC9
DIGITAL FILTER
IC9 CXD2550P
IC10
D/A CONVERTER
IC10 CXD1161P-2
IC11
LINE AMP
X1 16MHz
Q1 2SK381-TP
C107 2200μ 16
C106 4700μ 16
D6 10E2
D7 10E2
D8 10E2
D9 10E2
D10 10E2
C115 0.1
D1 RD6.8ES-T2
CNJ7
POW BOA
-8V
+8V
R102 68k
R103 1k
R101 3.3k
C114 10μ 50
C113 100μ 63
C315 0.1
C312 15p
C313 15p
R317 330
C316 100μ 10V
R320 1.5k
C317 4.7μ 50V
C318 4.7μ 50V
C311 22μ 16V
C314 0.1
R318 1k
R319 1k
C309 0.1
R311 100k
R312 100k
R310 10k
R309 100k
R307 470k
R308 22k
R306 22k
R305 1M
C307 1500p
C306 0.1
C305 4700p
C303 0.033
C304 0.47μ 50
R316 1k
R315 1k

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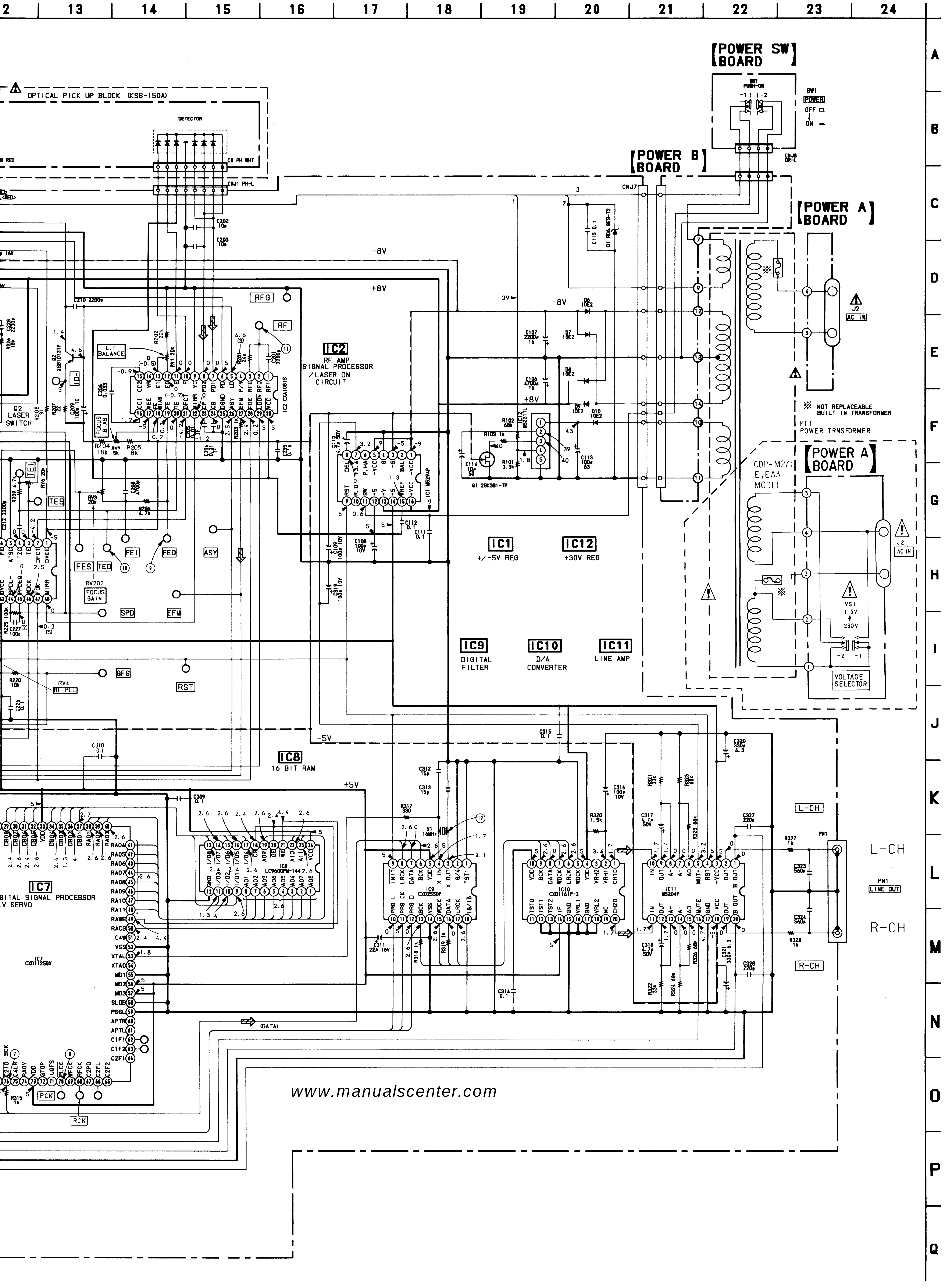
12
13
14
15
16
17
18
19
20
21
22
23
24
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
OPTICAL PICK UP BLOCK (KSS-150A)
DETECTOR
CN PH WHT
CNJ1 PH-L
POWER SW BOARD
SW1 PUSH-ON
SW1 POWER
OFF
ON
CNJ8 DR-L
POWER B BOARD
CNJ7
POWER A BOARD
-8V
+8V
RFG
RF
IC2
RF AMP
SIGNAL PROCESSOR
/LASER ON
CIRCUIT
IC2 CXA1081S
E.F BALANCE
FOCUS BIAS
Q2 LASER SWITCH
Q2 2SB1013TP
LD
TEI
TES
FES
TEO
FEI
FEO
ASY
RV203
FOCUS GAIN
SPD
EFM
GFS
RST
RV4
RF PLL
IC1 M5294P
Q1 2SK381-TP
IC12 M5231TL
IC1
+/-5V REG
IC12
+30V REG
IC9
DIGITAL FILTER
IC10
D/A CONVERTER
IC11
LINE AMP
J2
AC IN
NOT REPLACEABLE
BUILT IN TRANSFORMER
PT1
POWER TRNSFORMER
CDP-M27:
E,EA3
MODEL
VS1
115V
230V
VOLTAGE SELECTOR
-5V
+5V
IC8
16 BIT RAM
IC8 LC9600PM-144
IC7
DIGITAL SIGNAL PROCESSOR
CLV SERVO
IC7 CXD1125QX
IC9 CXD2550P
IC10 CXD1161P-2
IC11 M5204P
X1 16MHz
L-CH
R-CH
PN1
LINE OUT
(DATA)
PCK
RCK
R315 1k
R327 1k
R328 1k
C323 560p
C324 560p
C327 220p
C328 220p
C320 330µ 6.3
C321 330µ 6.3
C315 0.1
C314 0.1
C316 100µ 10V
C317 4.7µ 50V
C318 4.7µ 50V
C311 22µ 16V
C312 15p
C313 15p
R317 330
R320 1.5k
C310 0.1
C309 0.1
C107 2200µ 16
C106 4700µ 16
C113 100µ 63
C114 10µ 50
C115 0.1
D1 RD6.8E8-T2
D6 10E2
D7 10E2
D8 10E2
D9 10E2
D10 10E2
R101 3.3k
R102 68k
R103 1k
C108 100µ 10V
C109 100µ 10V
C111 0.1
C112 0.1
C119 100µ 10V
C202 10p
C203 10p
C201 2200p
C210 2200p
R202 22k
RV1 20k
RV2 5k
RV3 20k
R204 18k
R205 18k
R206 4.7k
C208 4700p
C204 1µ
C205 0.1µ
R220 10k
C226 0.1
R225 100k
C227 100p
RV6 20k
R209 4.7k
C212 2200p

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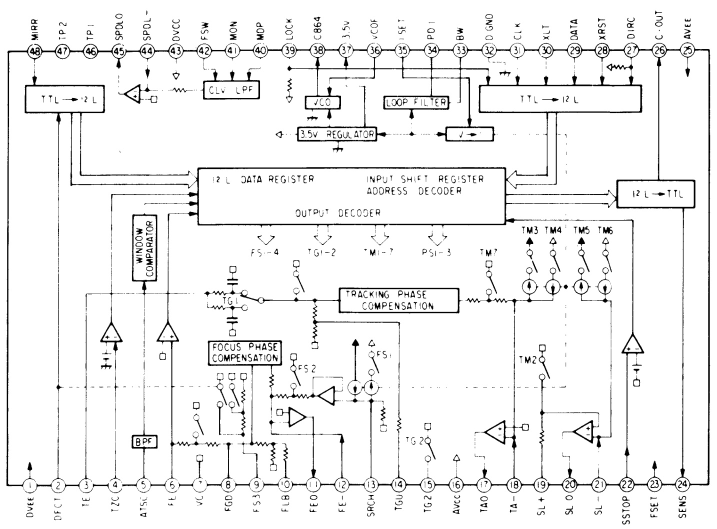
Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: $\mu\mu$F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistores are in Ω and ¼W or less unless otherwise specified.
- ^ : internal component.
- ▬▬ : B +line
- ▬ ▬ ▬ : B -line
- ☐ : adjustment for repair
- Signal path.
  ⇨ : CD
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark: STOP Mode
  (   ): PLAY
- Voltages are taken with a VOM (50kΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.

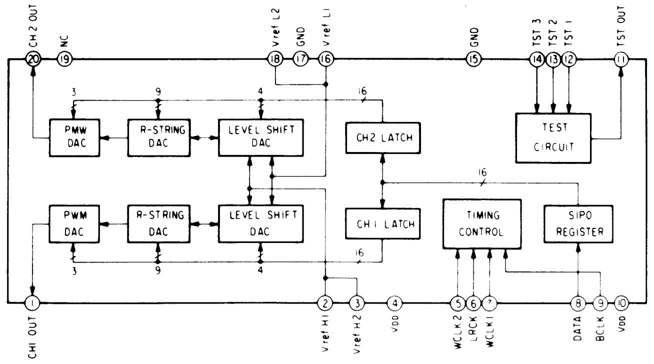
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	**Note:** Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

3-5. IC BLOCK DIAGRAMS

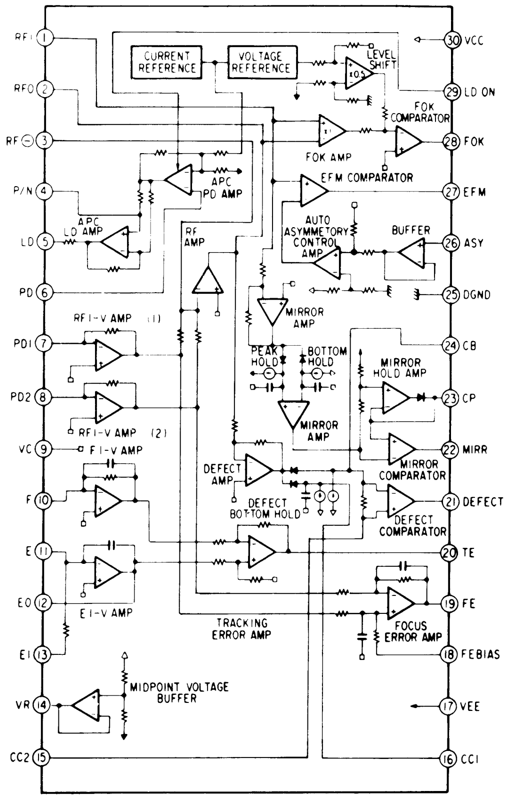
IC3 CXA1082BS


MIRR 48
TP2 47
TP1 46
SPDLO 45
SPDL- 44
DVCC 43
FSW 42
MON 41
MDP 40
LOCK 39
C864 38
3.5V 37
VCOF 36
ISET 35
PD1 34
BW 33
D GND 32
CLK 31
XLT 30
DATA 29
XRST 28
DIRC 27
C.OUT 26
AVEE 25
TTL → I²L
CLV LPF
VCO
LOOP FILTER
3.5V REGULATOR
I²L DATA REGISTER
INPUT SHIFT REGISTER
ADDRESS DECODER
OUTPUT DECODER
I²L → TTL
WINDOW COMPARATOR
FS1-4
TG1-2
TM1-7
PS1-3
TM7
TM3 TM4 TM5 TM6
TG1
TRACKING PHASE COMPENSATION
FOCUS PHASE COMPENSATION
FS2
FS1
TM2
TG2
BPF
1 DVEE
2 DFCT
3 TE
4 TZC
5 ATSC
6 FE
7 VC
8 FGD
9 FS3
10 FLB
11 FEO
12 FE-
13 SRCH
14 TGU
15 TG2
16 AVCC
17 TAO
18 TA-
19 SL+
20 SL O
21 SL-
22 SSTOP
23 FSET
24 SENS

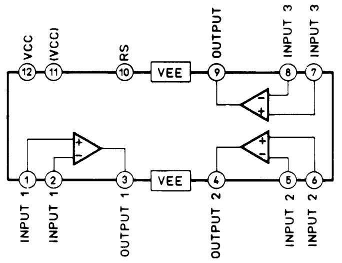
IC10 CXD1161P-2


CH2 OUT 20
NC 19
Vref L2 18
GND 17
Vref L1 16
GND 15
TST3 14
TST2 13
TST1 12
TST OUT 11
PMW DAC
R-STRING DAC
LEVEL SHIFT DAC
CH2 LATCH
TEST CIRCUIT
PWM DAC
R-STRING DAC
LEVEL SHIFT DAC
CH1 LATCH
TIMING CONTROL
SIPO REGISTER
3
9
4
16
1 CH1 OUT
2 Vref H1
3 Vref H2
4 VDD
5 WCLK2
6 LRCK
7 WCLK1
8 DATA
9 BCLK
10 VDD

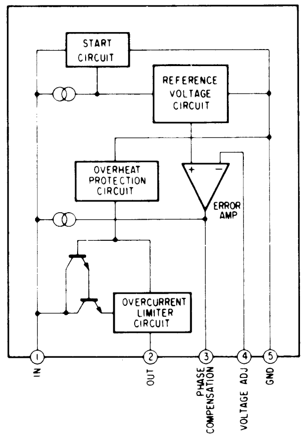
IC2 CXA1081S


RFI 1
RFO 2
RF⊖ 3
P/N 4
LD 5
PD 6
PD1 7
PD2 8
VC 9
F 10
E 11
EO 12
EI 13
VR 14
CC2 15
30 VCC
29 LD ON
28 FOK
27 EFM
26 ASY
25 DGND
24 CB
23 CP
22 MIRR
21 DEFECT
20 TE
19 FE
18 FEBIAS
17 VEE
16 CCI
CURRENT REFERENCE
VOLTAGE REFERENCE
LEVEL SHIFT
x0.5
FOK COMPARATOR
FOK AMP
APC PD AMP
APC LD AMP
EFM COMPARATOR
RF AMP
AUTO ASYMMETORY CONTROL AMP
BUFFER
MIRROR AMP
RFI-V AMP (1)
PEAK HOLD
BOTTOM HOLD
MIRROR HOLD AMP
MIRROR AMP
RFI-V AMP (2)
FI-V AMP
MIRROR COMPARATOR
DEFECT AMP
DEFECT BOTTOM HOLD
DEFECT COMPARATOR
EI-V AMP
TRACKING ERROR AMP
FOCUS ERROR AMP
MIDPOINT VOLTAGE BUFFER

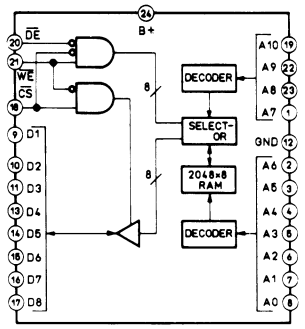
IC4, 5 CXA1291P


VCC 12
VCCI 11
RS 10
OUTPUT 3 9
INPUT 3 8
INPUT 3 7
VEE
VEE
1 INPUT 1
2 INPUT 1
3 OUTPUT 1
4 OUTPUT 2
5 INPUT 2
6 INPUT 2

IC12 M5231TL


START CIRCUIT
REFERENCE VOLTAGE CIRCUIT
OVERHEAT PROTECTION CIRCUIT
ERROR AMP
OVERCURRENT LIMITER CIRCUIT
1 IN
2 OUT
3 PHASE COMPENSATION
4 VOLTAGE ADJ
5 GND

IC8 CXK5816M-10L


24
B+
20 DE
21 WE
CS 18
9 D1
10 D2
11 D3
13 D4
14 D5
15 D6
16 D7
17 D8
8
8
DECODER
SELECTOR
2048×8 RAM
DECODER
A10 19
A9 22
A8 23
A7 1
GND 12
A6 2
A5 3
A4 4
A3 5
A2 6
A1 7
A0 8

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NOTE:

- The mech
  number i
  supplied.
- The cons
  part are i
  ber in the
- Items ma
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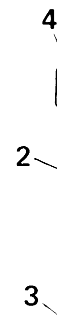
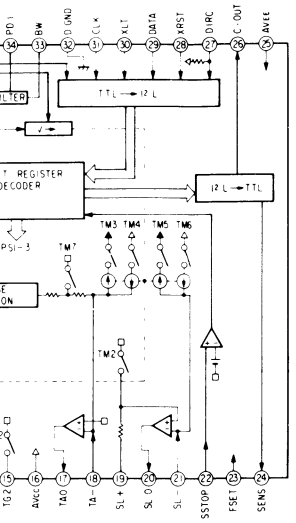
  service.
  pated wh

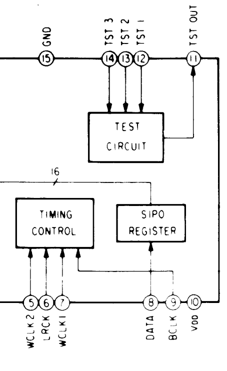
(1). CABI



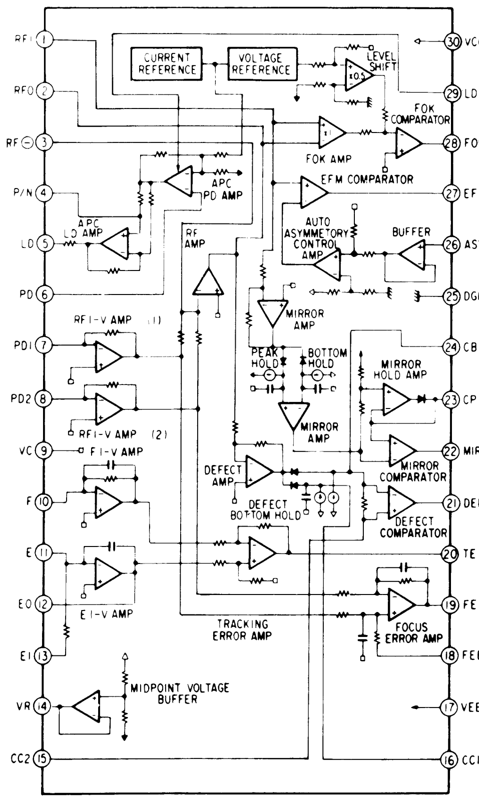
· "EA3" in
Saudi Ar

No. Part No
1 4-923-5
4-923-5
2 X-4917-
X-4917-
X-4917-
X-4917-
3 7-685-6
4 4-922-6
4-922-6
4-922-6
4-922-6
5 4-922-6
4-922-6

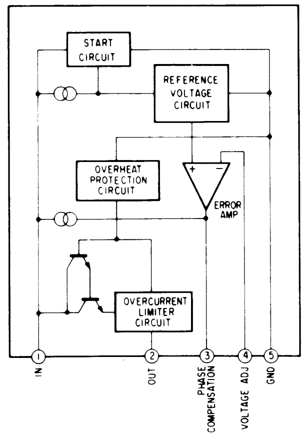

TTL → I²L
I²L → TTL
TM3 TM4 TM5 TM6
TM7
TM2


GND
TEST 3
TEST 2
TEST 1
TEST OUT
TEST CIRCUIT
TIMING CONTROL
SIPO REGISTER
WCLK2
LRCK
WCLK1
DATA
BCLK
VDD

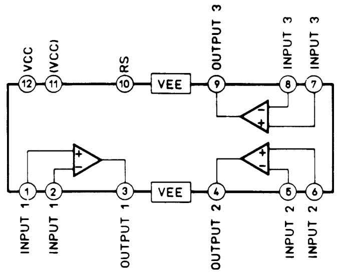
IC2 CXA1081S


RF
RFO
RF⊖
P/N
LD
PD
PD1
PD2
VC
F
E
EO
EI
VR
CC2
CC1
VEE
FEBIAS
FE
TE
DEFECT
MIRR
CP
CB
DGND
ASY
EFM
FOK
LD ON
VCC
CURRENT REFERENCE
VOLTAGE REFERENCE
LEVEL SHIFT
FOK COMPARATOR
FOK AMP
EFM COMPARATOR
APC PD AMP
APC LD AMP
RF AMP
AUTO ASYMMETORY CONTROL AMP
BUFFER
MIRROR AMP
PEAK HOLD
BOTTOM HOLD
MIRROR HOLD AMP
MIRROR COMPARATOR
DEFECT AMP
DEFECT BOTTOM HOLD
DEFECT COMPARATOR
RFI-V AMP (1)
RFI-V AMP (2)
FI-V AMP
EI-V AMP
TRACKING ERROR AMP
FOCUS ERROR AMP
MIDPOINT VOLTAGE BUFFER

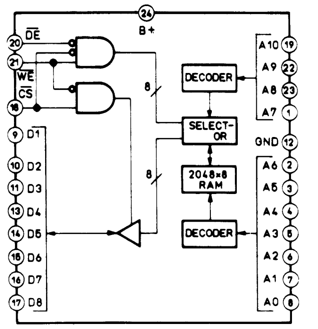
IC12 M5231TL


START CIRCUIT
REFERENCE VOLTAGE CIRCUIT
OVERHEAT PROTECTION CIRCUIT
ERROR AMP
OVERCURRENT LIMITER CIRCUIT
IN
OUT
PHASE COMPENSATION
VOLTAGE ADJ
GND

IC4, 5 CXA1291P


VCC
VCCI
RS
OUTPUT 3
INPUT 3
INPUT 3
VEE
VEE
INPUT 1
INPUT 1
OUTPUT 1
OUTPUT 2
INPUT 2
INPUT 2

IC8 CXK5816M-10L


B+
OE
WE
CS
D1
D2
D3
D4
D5
D6
D7
D8
DECODER
SELECT-OR
2048×8 RAM
DECODER
A10
A9
A8
A7
GND
A6
A5
A4
A3
A2
A1
A0

SECTION 4
EXPLODED VIEWS

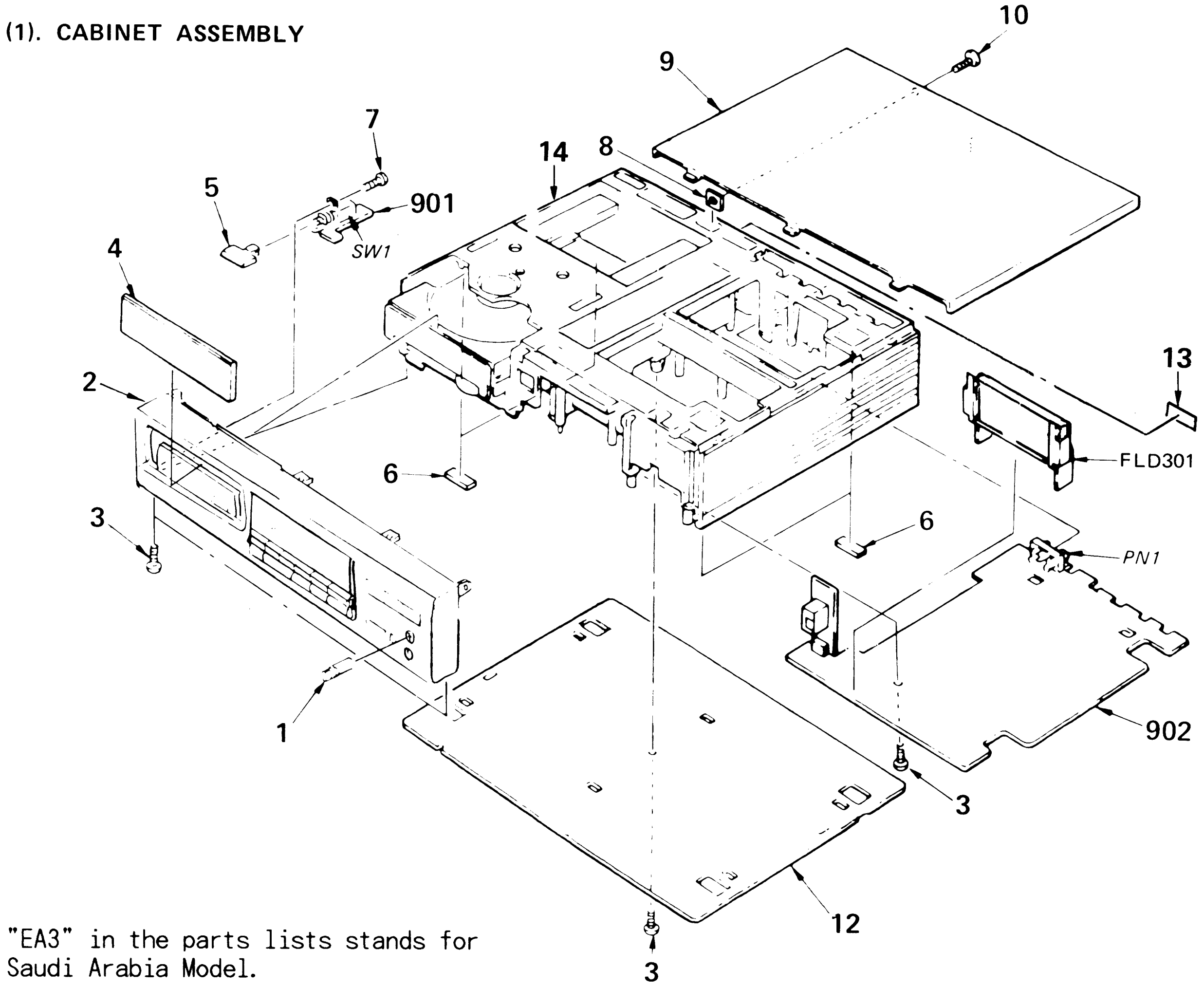
NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts
  Example:
  (RED) . . . KNOB, BALANCE (WHITE)
  ↑ ↑
  Cabinet's Color Parts' Color

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifé.

(1). CABINET ASSEMBLY

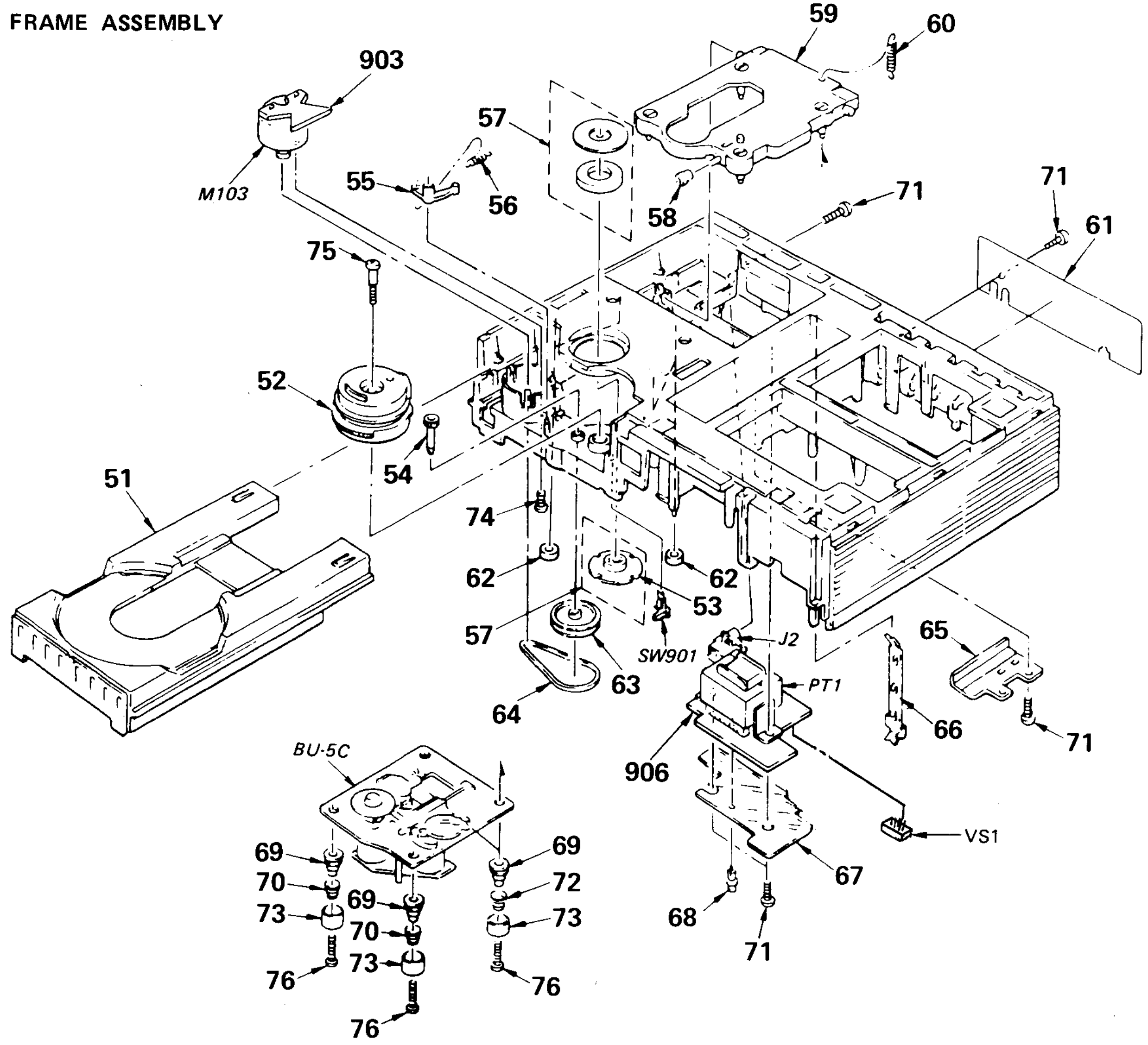

10
9
7
14
8
5
901
SW1
4
13
2
FLD301
6
3
6
PN1
1
902
3
12
3

- "EA3" in the parts lists stands for Saudi Arabia Model.

No.	Part No.	Description	Remarks
1	4-923-522-12	(M27:AEP,E/M47:AEP,UK)...KNOB (B.TYPE), LOV (PHONE LEVEL)(BLACK)	
	4-923-522-21	(M27:E,EA3).............KNOB (B.TYPE), LOV (PHONE LEVEL)(GRAY)	
2	X-4917-559-1	(M27:AEP,E)....PANEL ASSY, FRONT (BLACK)	
	X-4917-560-1	(M27:EA3,E)....PANEL ASSY, FRONT (GRAY)	
	X-4917-561-1	(M47:AEP,UK)...PANEL ASSY, FRONT (BLACK)	
	X-4917-563-1	(M27:Canadian) ...PANEL ASSY, FRONT (BLACK)	
3	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
4	4-922-665-11	(M47:AEP,UK)...PANEL, LOADING (BLACK)	
	4-922-665-21	(M27:AEP,Canadian) ...PANEL, LOADING (BLACK)	
	4-922-665-41	(M27:E)........PANEL, LOADING (BLACK)	
	4-922-665-51	(M27:EA3,E)....PANEL, LOADING (GRAY)	
5	4-922-660-01	(M27:AEP,E/M47:AEP,UK) ...BUTTON (POWER)(BLACK)	
	4-922-660-11	(M27:EA3,E)......BUTTON (POWER)(GRAY)	

No.	Part No.	Description	Remarks
6	4-917-524-01	FELT, FOOT	
7	7-685-533-11	SCREW +BTP 2.6X6 TYPE2 N-S	
8	*4-918-670-01	SUPPORT, GROUND	
9	4-917-536-01	(M27:AEP,E/M47:AEP,UK)...CASE (BLACK)	
	4-917-536-31	(M27:EA3,E)..............CASE (GLAY)	
10	3-703-685-21	SCREW (+BV 3X8)	
12	*4-917-535-01	PLATE, BOTTOM	
13	*4-885-838-00	LABEL, CLASS 1	
14	X-4917-534-3	FRAME ASSY	
901	*1-628-128-11	PC BOARD, POWER SW	
902	*A-4651-234-A	MOUNTED PCB, MAIN	
FLD301	1-519-479-21	INDICATOR TUBE, FLUORESCENT	
PN1	*1-562-999-21	JACK, PIN 2P (LINE OUT)	
SW1	1-552-928-00	SWITCH (POWER)	

(2). FRAME ASSEMBLY



No.	Part No.	Description	Remarks
51	*4-922-604-01	TABLE, DISK	
52	4-917-534-01	GEAR (A), LOADING	
53	*4-918-679-04	PULLEY, PRESS	
54	4-917-516-01	GEAR (B), LOADING	
55	4-917-519-01	LEVER, SET	
56	4-917-514-01	SPRING, TENSION	
57	A-4665-024-A	MAGNET ASSY	
58	4-917-515-01	ROLLER	
59	4-917-537-01	BASE, FLOATING	
60	4-917-526-01	SPRING, TENSION	
61	*4-922-685-01	(M47:AEP)........PLATE, INDICATION	
	*4-922-687-01	(M27:Canadian)...PLATE, INDICATION	
	*4-922-688-01	(M27:AEP)........PLATE, INDICATION	
	*4-922-689-01	(M27:E,EA3)......PLATE, INDICATION	
	*4-922-696-01	(M47:UK).........PLATE, INDICATION	
62	*3-576-990-01	CUSHION	
63	4-917-521-01	PULLEY, LOADING	
64	4-917-522-02	BELT	
65	*4-917-517-01	GUIDE, LEAD	
66	*4-917-511-01	PLATE, GROUND	

No.	Part No.	Description	Remarks
67	4-917-510-01	SHEET, INSULATING	
68	3-531-576-11	RIVET	
69	4-917-562-01	INSULATOR	
70	4-917-541-01	SPRING (B)	
71	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
72	4-917-507-01	SPRING (H)	
73	4-917-508-01	HOLDER, SP	
74	7-628-254-00	+PSW, 2.6X5	
75	7-685-152-19	SCREW, STEP	
76	7-685-535-11	SCREW +BTP 2.6X10 TYPE2 N-S	
903	*1-628-127-11	PC BOARD, ROADING	
906	*1-628-457-11	PC BOARD, POWER	
J2	1-526-929-11	(M27:E,EA3)............INLET, AC	
J2	1-526-930-11	(M27:Canadian).........INLET, AC	
J2	1-526-931-11	(M27:AEP/M47:AEP,UK)...INLET, AC	
M103	A-4608-330-A	MOTOR ASSY (LOADING)	
SW901	1-570-203-11	SWITCH, LEAF	
PT1	⚠.1-449-024-11	(M27:Canadian)...TRANSFORMER, POWER	
PT1	⚠.1-449-025-11	(M27:AEP/M47:AEP,UK) ...TRANSFORMER, POWER	
PT1	⚠.1-449-026-11	(M27:E,EA3)......TRANSFORMER, POWER	
VS1	⚠.1-570-046-11	(M27:E,EA3)...SWITCH, VOLTAGE CHANGE	

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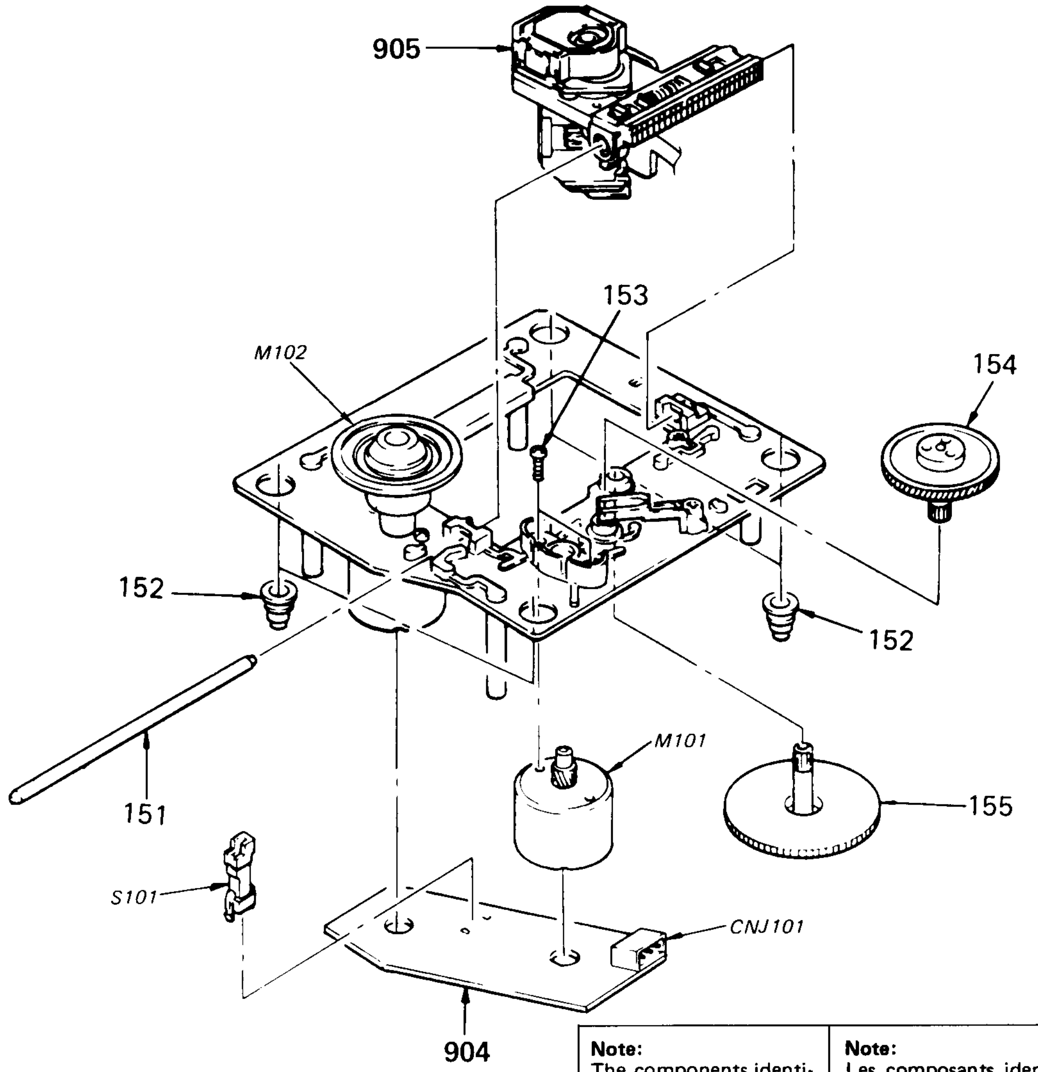
(3). BU-5C



Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

No.	Part No.	Description	Remarks
151	4-917-565-01	SHAFT, SLED	
152	4-917-562-01	INSULATOR	
153	7-621-255-15	SCREW +P 2X3	
154	4-917-567-01	GEAR (M)	
155	4-917-564-01	GEAR (P), FLATNESS	

No.	Part No.	Description	Remarks
904	*1-626-304-11	PC BOARD, SL/SP MOTOR	
905	⚠.8-848-062-01	DEVICE, OPTICAL KSS-150A(H)	
CNJ101	*1-564-720-11	PIN, CONNECTOR (SMALL TYPE) 4P	
M101	X-4917-504-1	ASSY, MOTOR (SLED)	
M102	X-4917-523-1	ASSY, MOTOR (SPINDLE)	
S101	1-571-274-11	SWITCH, LEAF (LIMIT IN)	

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SECTION 5
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description			
901	*1-628-128-11	PC BOARD, POWER SW			
902	*A-4651-234-A	MOUNTED PCB, MAIN			
903	*1-628-127-11	PC BOARD, LOADING			
904	*1-626-304-11	PC BOARD, SL/SP MOTOR			
905	⚠8-848-062-01	DEVICE, OPTICAL KSS-150A(H)			
906	*1-628-457-11	PC BOARD, POWER			
C106	1-124-898-11	ELECT	4700MF	20%	16V
C107	1-124-556-11	ELECT	2200MF	20%	16V
C108	1-124-443-00	ELECT	100MF	20%	10V
C109	1-124-443-00	ELECT	100MF	20%	10V
C110	1-124-927-11	ELECT	4.7MF	20%	50V
C111	1-164-159-11	CERAMIC	0.1MF		50V
C112	1-164-159-11	CERAMIC	0.1MF		50V
C113	1-124-572-11	ELECT	100MF	20%	63V
C114	1-123-875-11	ELECT	10MF	20%	50V
C115	1-164-159-11	CERAMIC	0.1MF		50V
C201	1-161-375-00	CERAMIC	0.0022MF	20%	16V
C202	1-162-199-31	CERAMIC	10PF	5%	50V
C203	1-162-199-31	CERAMIC	10PF	5%	50V
C204	1-136-153-00	FILM	0.01MF	5%	50V
C205	1-136-153-00	FILM	0.01MF	5%	50V
C206	1-136-159-00	FILM	0.033MF	5%	50V
C208	1-161-377-00	CERAMIC	0.0047MF	20%	16V
C209	1-124-443-00	ELECT	100MF	20%	10V
C210	1-161-375-00	CERAMIC	0.0022MF	20%	16V
C212	1-161-375-00	CERAMIC	0.0022MF	20%	16V
C213	1-136-165-00	FILM	0.1MF	5%	50V
C214	1-136-159-00	FILM	0.033MF	5%	50V
C215	1-123-382-00	ELECT	3.3MF	20%	50V
C216	1-136-165-00	FILM	0.1MF	5%	50V
C217	1-123-875-11	ELECT	10MF	20%	50V
C218	1-161-377-00	CERAMIC	0.0047MF	20%	16V
C219	1-164-159-11	CERAMIC	0.1MF		50V
C220	1-164-159-11	CERAMIC	0.1MF		50V
C221	1-164-159-11	CERAMIC	0.1MF		50V
C222	1-124-499-11	ELECT	1MF	20%	50V
C223	1-124-927-11	ELECT	4.7MF	20%	50V
C224	1-161-377-00	CERAMIC	0.0047MF	20%	16V
C225	1-124-443-00	ELECT	100MF	20%	10V
C226	1-164-159-11	CERAMIC	0.1MF		50V
C227	1-162-282-31	CERAMIC	100PF	10%	50V
C228	1-161-375-00	CERAMIC	0.0022MF	20%	16V
C229	1-162-291-31	CERAMIC	560PF	10%	50V
C230	1-164-159-11	CERAMIC	0.1MF		50V
C231	1-136-165-00	FILM	0.1MF	5%	50V

Ref.No.	Part No.	Description			
C232	1-124-234-00	ELECT	22MF	20%	16V
C233	1-124-234-00	ELECT	22MF	20%	16V
C234	1-164-159-11	CERAMIC	0.1MF		50V
C235	1-164-159-11	CERAMIC	0.1MF		50V
C301	1-136-165-00	FILM	0.1MF	5%	50V
C302	1-124-443-00	ELECT	100MF	20%	10V
C303	1-136-159-00	FILM	0.033MF	5%	50V
C304	1-124-902-00	ELECT	0.47MF	20%	50V
C305	1-161-377-00	CERAMIC	0.0047MF	20%	16V
C306	1-136-165-00	FILM	0.1MF	5%	50V
C307	1-161-374-11	CERAMIC	0.0015MF	20%	16V
C309	1-164-159-11	CERAMIC	0.1MF		50V
C310	1-164-159-11	CERAMIC	0.1MF		50V
C311	1-124-234-00	ELECT	22MF	20%	16V
C312	1-162-203-31	CERAMIC	15PF	5%	50V
C313	1-162-203-31	CERAMIC	15PF	5%	50V
C314	1-164-159-11	CERAMIC	0.1MF		50V
C315	1-164-159-11	CERAMIC	0.1MF		50V
C316	1-124-443-00	ELECT	100MF	20%	10V
C317	1-124-927-11	ELECT	4.7MF	20%	50V
C318	1-124-927-11	ELECT	4.7MF	20%	50V
C319	1-124-443-00	ELECT	100MF	20%	10V
C320	1-124-442-00	ELECT	330MF	20%	6.3V
C321	1-124-442-00	ELECT	330MF	20%	6.3V
C323	1-162-291-31	CERAMIC	560PF	10%	50V
C324	1-162-291-31	CERAMIC	560PF	10%	50V
C325	1-161-374-11	CERAMIC	0.0015MF	20%	16V
C326	1-161-374-11	CERAMIC	0.0015MF	20%	16V
C327	1-162-286-31	CERAMIC	220PF	10%	50V
C328	1-162-286-31	CERAMIC	220PF	10%	50V
C329	1-124-499-11	ELECT	1MF	20%	50V
C330	1-162-291-31	CERAMIC	560PF	10%	50V
C331	1-162-291-31	CERAMIC	560PF	10%	50V
C332	1-162-291-31	CERAMIC	560PF	10%	50V
CNJ1	*1-564-724-11	PIN, CONNECTOR (SMALL TYPE) 8P			
CNJ2	*1-564-724-11	PIN, CONNECTOR (SMALL TYPE) 8P			
CNJ3	*1-564-720-11	PIN, CONNECTOR (SMALL TYPE) 4P			
CNJ4	*1-564-336-00	PIN, CONNECTOR 2P			
CNJ5	*1-564-337-00	PIN, CONNECTOR 3P			
CNJ6	*1-566-165-11	CONNECTOR, BOARD TO BOARD 3P			
CNJ7	*1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P			
CNJ8	*1-566-779-11	PIN, CONNECTOR (PC BOARD) 4P			
CNJ101	*1-564-720-11	PIN, CONNECTOR (SMALL TYPE) 4P			
D1	8-719-109-97	DIODE HZS6.8ES-B2			
D3	8-719-107-94	DIODE 1SS202-1			
D4	8-719-107-94	DIODE 1SS202-1			

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Ref.No.	Part No.	Description			
D5	8-719-107-94	DIODE 1SS202-1			
D6	8-719-200-02	DIODE 10E2			
D7	8-719-200-02	DIODE 10E2			
D8	8-719-200-02	DIODE 10E2			
D9	8-719-200-02	DIODE 10E2			
D10	8-719-200-02	DIODE 10E2			
FLD301	1-519-479-21	INDICATOR TUBE, FLUORESCENT			
IC1	8-759-631-40	IC M5294P			
IC2	8-752-034-00	IC CXA1081S			
IC3	8-752-032-30	IC CXA1082BS			
IC4	8-752-035-28	IC CXA-1291P			
IC5	8-752-035-28	IC CXA-1291P			
IC6	8-759-978-34	IC MSC6458-32SS			
IC7	8-752-328-62	IC CXD1125Q			
IC8	8-752-323-64	IC CXK5816M-12L			
IC9	8-752-328-72	IC CXD2550P			
IC10	8-759-805-36	IC CXD1161P-3			
IC11	8-759-631-39	IC M5204P			
IC12	8-759-605-43	IC M5231TL			
IC13	8-749-920-03	IC GP1U52			
IB101	1-233-171-11	COMPOSITION CIRCUIT BLOCK			
IB102	1-233-171-11	COMPOSITION CIRCUIT BLOCK			
J1	1-566-936-41	JACK, LARGE TYPE (PHONES)			
J2	1-526-929-11	(M27:E,EA3)............INLET, AC			
J2	1-526-930-11	(M27:Canadian).........INLET, AC			
J2	1-526-931-11	(M27:AEP/M47:AEP,UK)...INLET, AC			
L301	*1-410-858-11	INDUCTOR	0UH		
L303	1-410-973-11	INDUCTOR	22UH		
M101	X-4917-504-1	ASSY, MOTOR (SLED)			
M102	X-4917-523-1	ASSY, MOTOR (SPINDLE)			
M103	A-4608-330-A	MOTOR ASSY (LOADING)			
PN1	*1-562-999-21	JACK, PIN 2P (LINE OUT)			
PT1	⚠.1-449-024-11	(M27:Canadian)...TRANSFORMER, POWER			
PT1	⚠.1-449-025-11	(M27:AEP/M47:AEP,UK) ...TRANSFORMER, POWER			
PT1	⚠.1-449-026-11	(M27:E,EA3)......TRANSFORMER, POWER			
Q1	8-729-600-94	TRANSISTOR 2SK381			
Q2	8-729-801-83	TRANSISTOR 2SB1013			
Q3	8-729-900-80	TRANSISTOR DTC114ES			
Q4	8-729-900-89	TRANSISTOR DTC144ES			
Q5	8-729-900-89	TRANSISTOR DTC144ES			
Q6	8-729-900-89	TRANSISTOR DTC144ES			
R101	1-249-423-11	CARBON	3.3K	5%	1/4W
R102	1-249-439-11	CARBON	68K	5%	1/4W
R103	1-249-417-11	CARBON	1K	5%	1/4W

Ref.No.	Part No.	Description			
R201	1-247-864-11	CARBON	24K	5%	1/4W
R202	1-249-433-11	CARBON	22K	5%	1/4W
R203	1-249-417-11	CARBON	1K	5%	1/4W
R204	1-249-432-11	CARBON	18K	5%	1/4W
R205	1-249-432-11	CARBON	18K	5%	1/4W
R206	1-249-425-11	CARBON	4.7K	5%	1/4W
R207	1-249-397-11	CARBON	22	5%	1/4W
R208	1-247-806-11	CARBON	91	5%	1/4W
R209	1-249-425-11	CARBON	4.7K	5%	1/4W
R211	1-247-882-11	CARBON	130K	5%	1/4W
R212	1-249-440-11	CARBON	82K	5%	1/4W
R213	1-247-889-00	CARBON	270K	5%	1/4W
R214	1-249-435-11	CARBON	33K	5%	1/4W
R215	1-249-423-11	CARBON	3.3K	5%	1/4W
R216	1-249-425-11	CARBON	4.7K	5%	1/4W
R217	1-247-896-11	CARBON	510K	5%	1/4W
R218	1-249-429-11	CARBON	10K	5%	1/4W
R219	1-249-421-11	CARBON	2.2K	5%	1/4W
R220	1-249-429-11	CARBON	10K	5%	1/4W
R221	1-249-433-11	CARBON	22K	5%	1/4W
R222	1-249-414-11	CARBON	560	5%	1/4W
R223	1-249-441-11	CARBON	100K	5%	1/4W
R224	1-215-434-00	METAL	3.6K	1%	1/6W
R225	1-249-441-11	CARBON	100K	5%	1/4W
R226	1-249-432-11	CARBON	18K	5%	1/4W
R227	1-249-432-11	CARBON	18K	5%	1/4W
R228	1-249-393-11	CARBON	10	5%	1/4W
R229	1-247-881-00	CARBON	120K	5%	1/4W
R230	1-249-427-11	CARBON	6.8K	5%	1/4W
R231	1-249-439-11	CARBON	68K	5%	1/4W
R232	1-249-437-11	CARBON	47K	5%	1/4W
R234	1-249-440-11	CARBON	82K	5%	1/4W
R235	1-249-441-11	CARBON	100K	5%	1/4W
R236	1-249-441-11	CARBON	100K	5%	1/4W
R237	1-249-441-11	CARBON	100K	5%	1/4W
R238	1-249-417-11	CARBON	1K	5%	1/4W
R239	1-249-417-11	CARBON	1K	5%	1/4W
R240	1-249-417-11	CARBON	1K	5%	1/4W
R301	1-249-425-11	CARBON	4.7K	5%	1/4W
R302	1-249-425-11	CARBON	4.7K	5%	1/4W
R303	1-249-425-11	CARBON	4.7K	5%	1/4W
R304	1-249-425-11	CARBON	4.7K	5%	1/4W
R305	1-247-903-00	CARBON	1M	5%	1/4W
R306	1-249-433-11	CARBON	22K	5%	1/4W
R307	1-247-895-00	CARBON	470K	5%	1/4W

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description			
R308	1-249-433-11	CARBON	22K	5%	1/4W
R309	1-249-441-11	CARBON	100K	5%	1/4W
R310	1-249-429-11	CARBON	10K	5%	1/4W
R311	1-215-469-00	METAL	100K	1%	1/6W
R312	1-215-469-00	METAL	100K	1%	1/6W
R315	1-249-417-11	CARBON	1K	5%	1/4W
R316	1-249-417-11	CARBON	1K	5%	1/4W
R317	1-249-411-11	CARBON	330	5%	1/4W
R318	1-249-417-11	CARBON	1K	5%	1/4W
R319	1-249-417-11	CARBON	1K	5%	1/4W
R320	1-249-419-11	CARBON	1.5K	5%	1/4W
R321	1-249-435-11	CARBON	33K	5%	1/4W
R322	1-249-435-11	CARBON	33K	5%	1/4W
R323	1-249-439-11	CARBON	68K	5%	1/4W
R324	1-249-439-11	CARBON	68K	5%	1/4W
R325	1-249-439-11	CARBON	68K	5%	1/4W
R326	1-249-439-11	CARBON	68K	5%	1/4W
R327	1-249-417-11	CARBON	1K	5%	1/4W
R328	1-249-417-11	CARBON	1K	5%	1/4W
R329	1-249-402-11	CARBON	56	5%	1/4W
R330	1-249-402-11	CARBON	56	5%	1/4W
R331	1-249-425-11	CARBON	4.7K	5%	1/4W
R332	1-249-425-11	CARBON	4.7K	5%	1/4W
R333	1-249-425-11	CARBON	4.7K	5%	1/4W
RV1	1-228-995-00	RES, ADJ, CARBON 20K			
RV2	1-228-993-00	RES, ADJ, CARBON 5K			
RV3	1-228-995-00	RES, ADJ, CARBON 20K			
RV4	1-228-990-00	RES, ADJ, METAL GLAZE 1K			
RV5	1-238-307-11	RES, VAR, CARBON 1K/1K (PHONE LEVEL)			
RV6	1-228-995-00	RES, ADJ, CARBON 20K			
S101	1-571-274-11	SWITCH, LEAF (LIMIT IN)			
SW1	1-552-928-00	SWITCH (POWER)			
SW101	1-571-685-11	SWITCH, KEY BOARD (CONTINUE)			
SW102	1-571-685-11	SWITCH, KEY BOARD (SHUFFLE)			
SW103	1-571-685-11	SWITCH, KEY BOARD (PROGRAM)			
SW104	1-571-685-11	SWITCH, KEY BOARD (▶▶)			
SW105	1-571-685-11	SWITCH, KEY BOARD (◀◀)			
SW106	1-571-685-11	SWITCH, KEY BOARD (EDIT/TIME FADE)			
SW107	1-571-685-11	SWITCH, KEY BOARD (REPEAT)			
SW108	1-571-685-11	SWITCH, KEY BOARD (AUTO SPACE)			
SW109	1-571-685-11	SWITCH, KEY BOARD (TIME)			
SW110	1-571-686-11	SWITCH, KEY BOARD (CLEAR)			
SW111	1-571-686-11	SWITCH, KEY BOARD (CHECK)			
SW112	1-571-686-11	SWITCH, KEY BOARD (▶▶|)			
SW113	1-571-686-11	SWITCH, KEY BOARD (|◀◀)			
SW114	1-571-686-11	SWITCH, KEY BOARD (■)			

Ref.No.	Part No.	Description
SW115	1-571-686-11	SWITCH, KEY BOARD (▶II)
SW116	1-571-686-11	SWITCH, KEY BOARD (▲)
SW901	1-570-203-11	SWITCH, LEAF
VS1	1-570-046-11	(M27:E,EA3)...SWITCH, VOLTAGE CHANGE
X1	1-567-908-21	VIBRATOR, CRYSTAL (16.9MHz)
X2	1-577-082-11	VIBRATOR, CERAMIC (4MHz)

ACCESSORY & PACKING MATERIAL

Part No.	Description
1-465-050-11	(M47:AEP,UK)...REMOTE COMMANDER (RM-D170)
⚠1-506-401-00	(M27:EA3)...ADAPTOR, CONVERSION
⚠1-526-565-00	(M27:E).....AC PLUG ADAPTOR
⚠1-556-280-00	(M27:E)...........CORD, POWER
⚠1-558-032-11	(M47:UK)..........CORD, POWER
⚠1-558-834-11	(M27:Canadian)....CORD, POWER
⚠1-558-835-11	(M27:EA3,AEP/M47:AEP)...CORD, POWER
1-558-543-11	CORD, CONNECTION
1-559-533-11	CORD, CONNECTION
3-750-022-11	MANUAL, INSTRUCTION
3-750-022-21	(M27:Canadian)...MANUAL, INSTRUCTION
3-750-022-31	(M27:Canadian)...MANUAL, INSTRUCTION
3-750-022-41	(M27/M47:AEP)....MANUAL, INSTRUCTION
*3-795-629-11	(M27/M47:AEP)...INSTRUCTION
*4-885-838-00	LABEL, CLASS 1
*4-922-672-21	(M47)....INDIVIDUAL CARTON
*4-922-672-31	(M27)....INDIVIDUAL CARTON
*4-922-673-01	CUSHION
7-632-650-75	SHEET, PROTECTION (500MM)

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

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Troubleshooting Guide

Symptom	**Cause**	**Remedy**
The disc tray does not close.	The disc is not placed correctly.	Place the disc correctly on the disc tray.
Play does not start.	Dirty disc.	Clean the disc.
	The disc is inserted upside down.	Insert the disc with the printed side up.
	The player is in the pause mode.	Press ▶II (II) to release pause.
	Moisture condensation.	Leave the player turned on for approximately one hour.
Play does not start and "no disc" is displayed.	There is no disc in the unit.	Insert a disc.
Sound is not heard.	Loose connection.	Insert the plug firmly.
	Connection is incorrect.	Check the connection refering to "Connecting the CD Player".
	The LINE OUT/HEADPHONE LEVEL control is set to the minimum.	Turn the control clockwise.
77 is displayed when you press ▶▶	▶▶ was continuously pressed at the end of the disc.	Press ◀◀ or I◀◀ to return to normal indication.
Play does not begin from the first selection.	The player is in the PROGRAM or SHUFFLE mode.	Press CONTINUE.
The remote commander does not operate the unit.	The batteries are run down.	Replace both batteries.
	The remote commander is not pointed at the remote sensor.	Point the remote commander at the sensor.
	There is an obstacle between the remote commander and the unit.	Remove the obstacle.
	The remote commander is too far from the unit.	Move closer.
Any operation is not possible.	The internal control program may not run.	Turn off the power and turn it on again.

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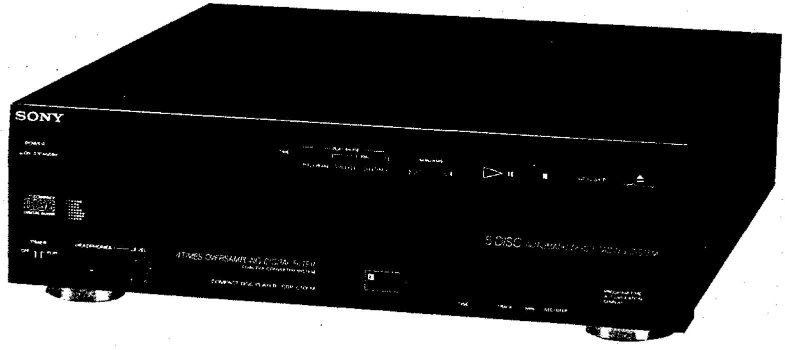
Sony Corporation
Audio Group

CDP-C500M

SERVICE MANUAL

AEP Model
UK Model
E Model



COMPACT
DISC
DIGITAL AUDIO

SPECIFICATIONS

COMPACT DISC PLAYER

System	Compact disc digital audio system
Laser	Semiconductor laser (λ = 780 nm) Emission duration: continuous
Laser output	Max. 44.6 μW* * This output is the value measured at a distance of about 200 mm from the objective lens surface on the Optical Pick-up Block.
Frequency response	2 Hz – 20 kHz (±1 dB)
Signal to noise ratio	More than 100 dB
Dynamic range	More than 90 dB
Harmonic distortion	Less than 0.05% (1 kHz)
Channel separation	More than 95 dB (1 kHz)
Wow and flutter	Below measurable limit
Outputs	LINE OUT (phono jacks) Output level 2 V (at 50 kilohms) Load impedance over 10 kilohms PHONES (stereo phone jack) Output level 0 – 10 mW (variable) (at 32 ohms)

GENERAL

Power requirements	UK model : 240 V AC, 50 Hz AEP model : 220 V AC, 50/60 Hz E model : 110-120, 220-240 V AC adjustable, 50/60 Hz
Power consumption	10 W
Dimensions	Approx. 355 × 105 × 385 mm (w/h/d) (14 × 4¼ × 15¼ inches) not including projecting parts and controls
Weight	Approx. 5.1 kg (11.4 lb)

REMOTE COMMANDER (RM-D505)

Remote control system	Infrared control
Power requiremernts	3 V DC with two size AA (R6) batteries
Dimensions	Approx. 43 × 20 × 175 mm (w/h/d) (1 11/16 × 13/16 × 6 15/16 inches)
Weight	Approx. 110 g (4 oz) including batteries

SUPPLIED ACCESSORIES

Audio signal connecting cord
(phono plug X 2 ⟷ phono plug X 2) (1)
Remote commander (1)
AC plug Adaptor (1) (for countries other than UK and EC only)
Sony SUM-3 (NS) batteries (2)
Operating Manual (1)

Design and specifications subject to change without notice.

MICROFILM

COMPACT DISC PLAYER

SONY®

TABLE OF CONTENTS

Section *Title* *Page*

Specifications 1
Servicing Note 2

1. GENERAL

Location and Function of Controls 3

2. DISASSEMBLY 4

3. ELECTRICAL ADJUSTMENTS

RF PLL Frequency Adjustment/Lock Frequency Check 5
E-F Balance Adjustment 5
Focus Bias Adjustment 5

REFERENCE

Focus/Tracking Gain Adjustment 6

4. DIAGRAMS

4-1. Circuit Boards Location 8
4-2. Semiconductor Lead Layouts 8
4-3. Printed Wiring Boards 9
4-4. Schematic Diagram 13
- IC Block Diagrams 16

5. EXPLODED VIEWS 17

6. ELECTRICAL PARTS LIST 21

SERVICING NOTE

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

Laser Diode Properties

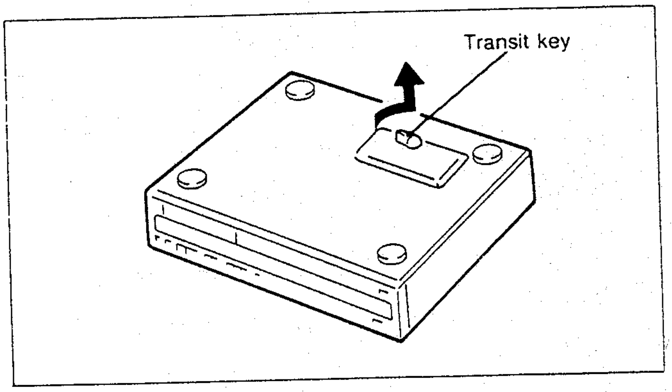
- Material: GaAlAs
- Wavelength: 780 mm
- Emission Duration: continuous
- Laser Output Power: less than 44.6 μW*
  - * This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

During service, do not take the Optical Pick-up Block apart, and do not adjust the APC circuit. If there is a breakdown in the APC circuit (including laser diode), replace the entire Optical Pick-up Block (including APC board).

Note on the Transit Key



The white transit key on the bottom exterior of the unit protects the optical system against shock during transportation. Before operating the CD player, be sure to remove the key by following the instructions on the label, and store it in a safe place.

When transporting the unit, replace the key in its original hole and lock it in place.

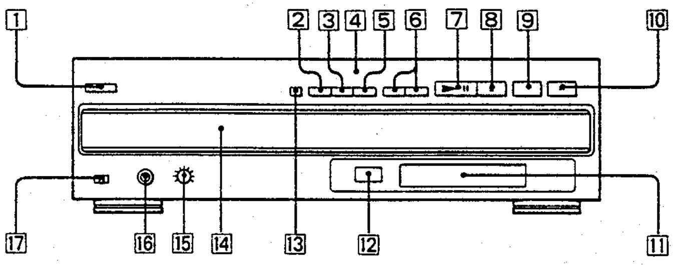
SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1
OUTLINE

1-1. LOCATION AND CONTROLS

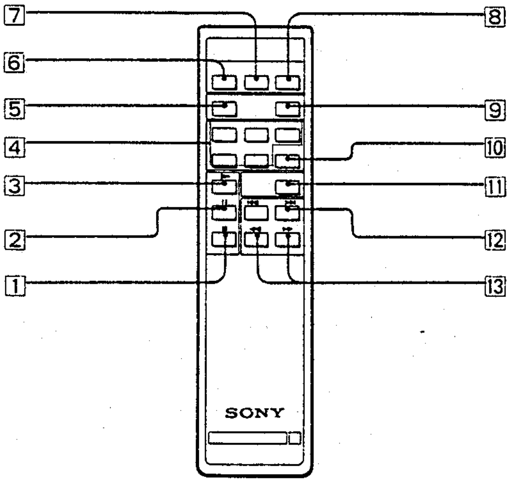
Front Panel



1 POWER switch
2 PROGRAM button
3 SHUFFLE button
4 1 DISC indicator
5 CONTINUE button
6 ⏮⏭(AMS*/RMS**) buttons
7 ▶II (play/pause) button
8 ■ (stop) button
9 DISC SKIP button
10 ⏏ OPEN/CLOSE button
11 Display window
12 Remote sensor
13 TIME button
14 DISC tray
15 (headphone) LEVEL control
16 PHONES (headphones) jack
17 TIMER switch

* AMS is the abbreviation of Automatic Music Sensor.
** RMS is the abbreviation of Random Music Sensor.

REMOTE COMMANDER RM-D505



1 ■ (stop) button
2 II (pause) button
3 ▶ (play) button
4 DISC 1 – 5 buttons
5 TIME button
6 PGM (program) button
7 SHUFFLE button
8 CONTINUE button
9 REPEAT button
10 DISC SKIP button
11 FADER button
12 ⏮⏭(AMS*) buttons
13 ◀◀▶▶ (manual search) buttons

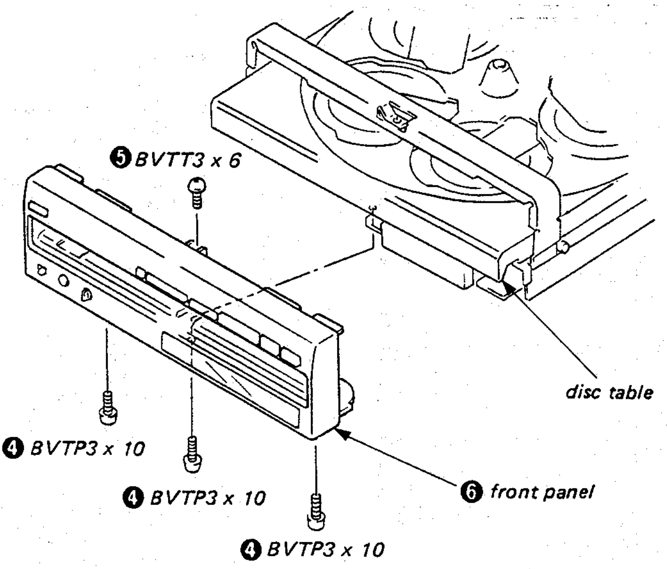
SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

FRONT PANEL

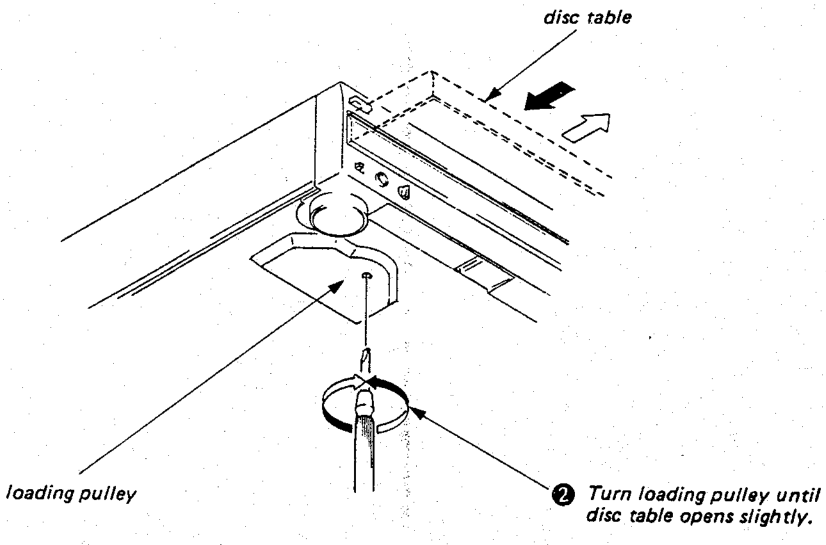
A. When disc table opens automatically by pressing OPEN/CLOSE button;

❶ *Remove top cover.*
❷ *Press POWER switch to turn the power on.*
❸ *Press OPEN/CLOSE button to open disc table.*


❺ BVTT3 x 6
disc table
❹ BVTP3 x 10
❹ BVTP3 x 10
❻ front panel
❹ BVTP3 x 10

B. When disc table dols not open even if OPEN/CLOSE button is pressed;

❶ *Remove top cover.*
❸ *Perform steps A-4 to A-6.*

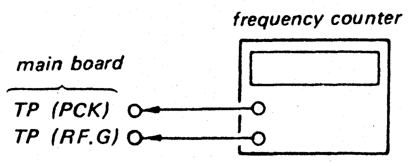

disc table
loading pulley
❷ Turn loading pulley until disc table opens slightly.

SECTION 3
ELECTRICAL ADJUSTMENTS

1. Perform adjustments in the order given.
2. Use YEDS-18 (Part No.: 3-702-101-01) disc unless otherwise indicated.
3. Use the oscilloscope with more than 10 MΩ impedance.

RF PLL Frequency Adjustment/Lock Frequency Check

Procedure:

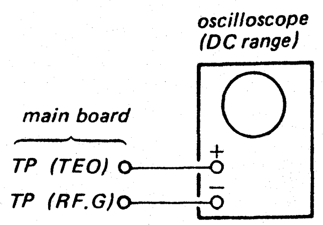


1. Connect test point TP (ASY) to ground with lead wire.
2. Turn POWER switch on.
3. Connect the frequency counter to test points TP (PCK).
4. Adjust RV5 so that the reading on frequency counter is 4.3218 MHz ±30 kHz.
   ..... (RF PLL frequency adjustment)
5. Remove lead wire connecting TP (ASY) to ground.
6. Put disc (YEDS-18) in and press ▷ button.
7. Confirm that the reading on frequency counter is 4.3218 MHz.

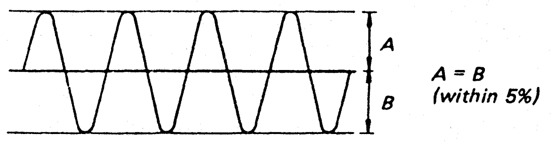
E-F Balance Adjustment

This adjustment should be made when replacing TOP (T-type Optical Pick-up).

Procedure:



1. Connect test point TP (ADJ) and TP (TES) to ground with lead wire.
2. Connect oscilloscope to test point TP (TEO).
3. Turn POWER switch on.
4. Put disc (YEDS-18) in and press ▷ button.
5. Adjust RV1 so that the traverse waveform is symmetrical above and below.
6. After adjustment, remove the lead wire connected in step 1.

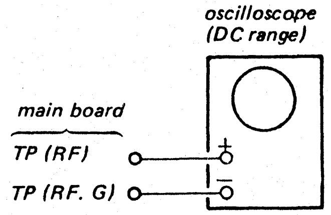


VOLT/DIV: 1 V
TIME/DIV: 1 ms

Focus Bias Adjustment

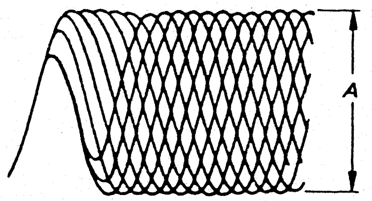
This adjustment should be made when replacing TOP (T-type Optical Pick-up).

Procedure:



1. Connect oscilloscope to test points TP (RF) and test point TP (RF. G).
2. Turn POWER switch on.
3. Put disc (YEDS-18) in and press ▷ button.
4. Adjust RV2 for an optimum waveform eye pattern or so that the peak is maximum. Optimum eye pattern means that shape "◇" can be clearly distinguished at the center of the waveform.

RF signal waveform



A = 1.2 V±0.2 (Vp-p)

REFERENCE

Focus/Tracking Gain Adjustment

A frequency responce analyzer is necessary in order to perform this adjustment exactly.

However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, do not perform this adjustment.

Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when the 2-axis device operate.

However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise when the 2-axis device operates increases.
- When gain is lowered, mechanical shock and skipping occurs more easily.
- When gain adjustment is off, the symptoms below appear.

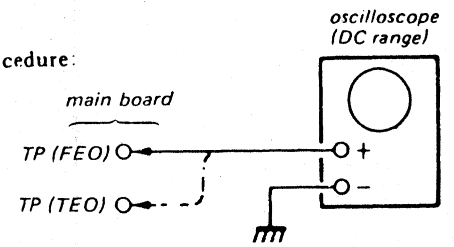
Symptoms \ Gain	Focus	Tracking
• The time until music starts becomes longer for STOP →▷PLAY or automatic selection (⏮ ⏭buttons pressed.) (Normally takes about 1 seconds.)	low	low or high
• Music does not start and disc continues to rotate for STOP→▷PLAY or automatic selection.(⏮ ⏭ buttons pressed.)	–	low
• Disc table opens shortly after STOP→▷PLAY.	low or high	–
• Sound is interrupted during PLAY. Or time counter display stops progressing.	–	low
• More noise during 2-axis device operation.	high	high

The following is a simple adjustment method.

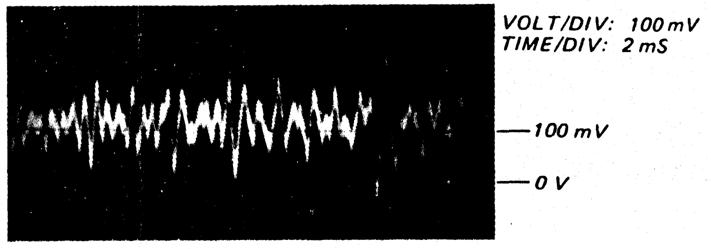
– Primary Adjustment –

Note: Since exact adjustment cannot be performed, remember the positions of the controls before performing the adjustment. If the positions after the primary adjustment are only a little different, return the controls to the original position.

Procedure:

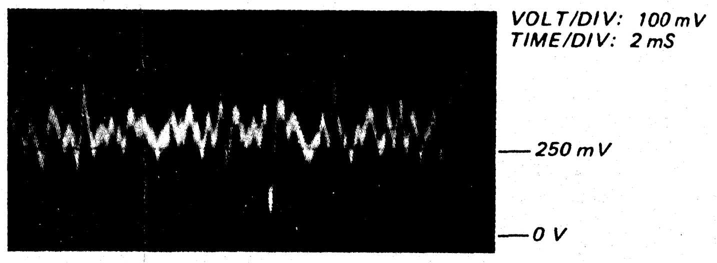


1. Keep the set horizontal.
   (If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2 axis device.)
2. Insert disc (YEDS-18: Fifth Selection) and press ▷ PLAY button.
3. Connect oscilloscope to main amp board TP (FEO).
4. Adjust RV3 so that the waveform is as shown in the figure below. (focus gain adjustment)

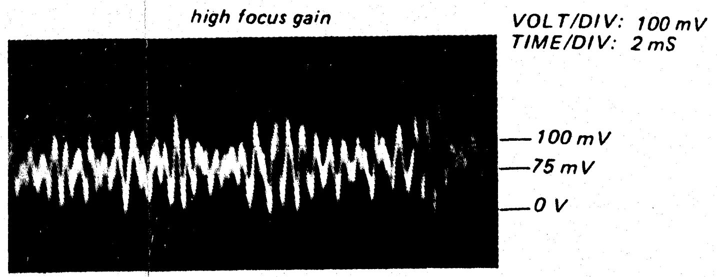


- Incorrect Examples (DC level changes more than on adjusted waveform)

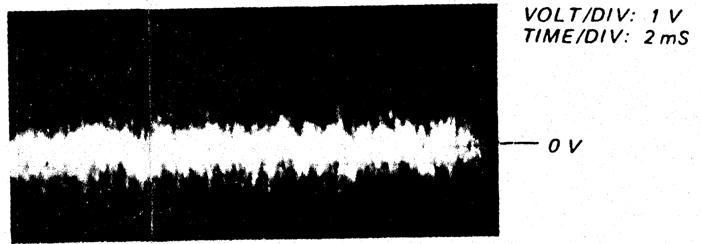
low focus gain



high focus gain



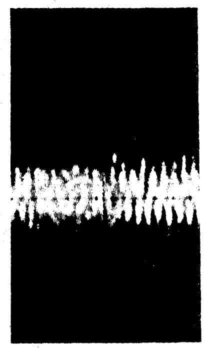
5. Connect oscilloscope to main board TP (TEO).
6. Adjust RV4 so that the waveform is as shown in the figure below. (tracking gain adjustment)



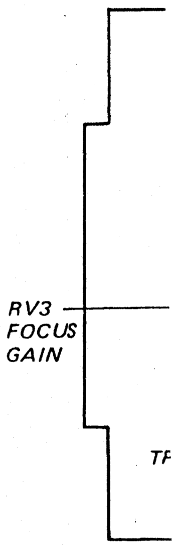
- Incorrect Exa

lo

high tracking gai
(higher fundame

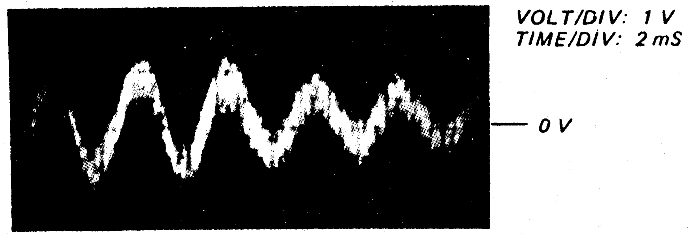


Adjustment Locat

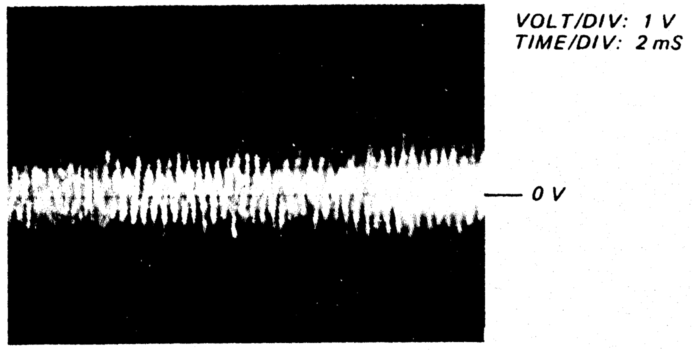


- Incorrect Examples (fundamental wave appears)

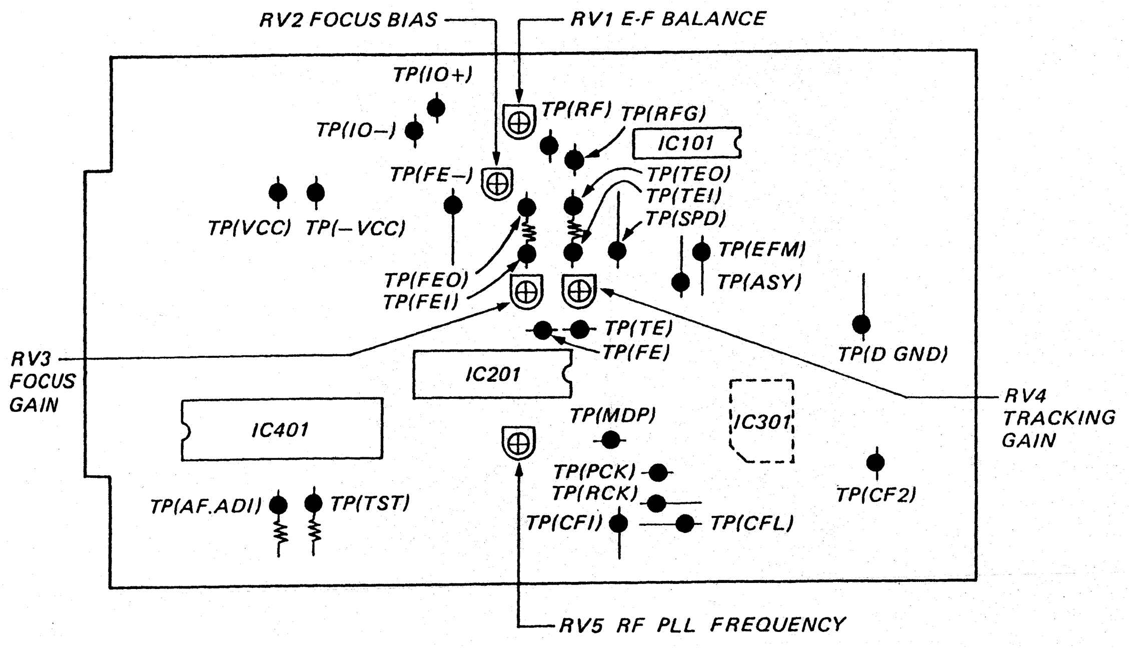
low tracking gain



high tracking gain
(higher fundamental wave than for low gain)



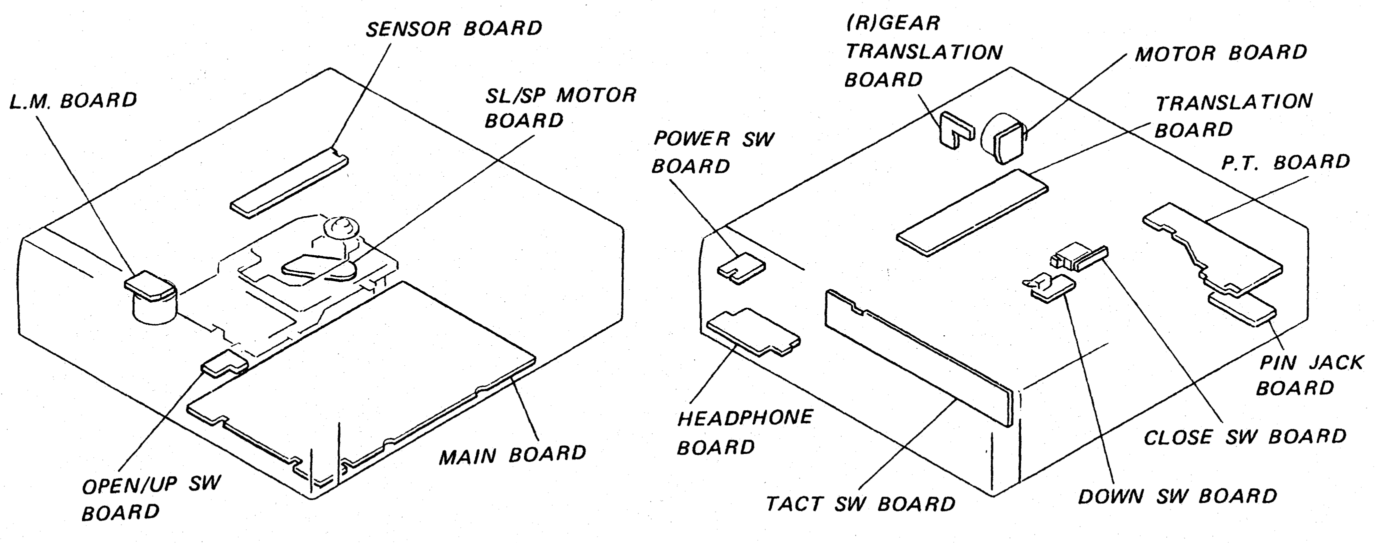
Adjustment Location: main board


RV2 FOCUS BIAS
RV1 E-F BALANCE
TP(IO+)
TP(IO−)
TP(RF)
TP(RFG)
IC101
TP(FE−)
TP(TEO)
TP(TEI)
TP(SPD)
TP(VCC)
TP(−VCC)
TP(EFM)
TP(ASY)
TP(FEO)
TP(FEI)
TP(TE)
TP(FE)
TP(D GND)
RV3 FOCUS GAIN
IC201
IC401
TP(MDP)
IC301
RV4 TRACKING GAIN
TP(PCK)
TP(RCK)
TP(CF2)
TP(AF.ADI)
TP(TST)
TP(CFI)
TP(CFL)
RV5 RF PLL FREQUENCY

COMPONENT SIDE (FRONT)

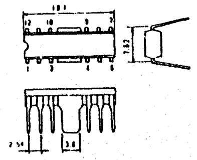
SECTION 4
DIAGRAMS

4-1. CIRCUIT BOARD LOCATION

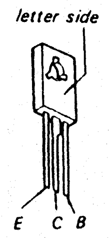

SENSOR BOARD
(R)GEAR TRANSLATION BOARD
MOTOR BOARD
L.M. BOARD
SL/SP MOTOR BOARD
TRANSLATION BOARD
POWER SW BOARD
P.T. BOARD
PIN JACK BOARD
HEADPHONE BOARD
CLOSE SW BOARD
MAIN BOARD
OPEN/UP SW BOARD
TACT SW BOARD
DOWN SW BOARD

4-2. SEMICONDUCTOR LEAD LAYOUTS

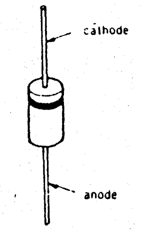
CXA1291P



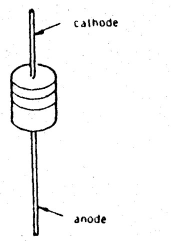
2SB548


letter side
E C B

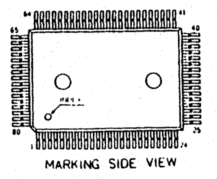
10E2N
RD33E-L2


cathode
anode

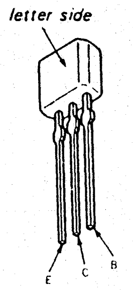
RD6.8ES-B3
RD9.1ES-L
US1060M-TP


cathode
anode

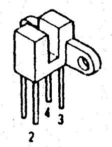
CXD1125Q


MARKING SIDE VIEW

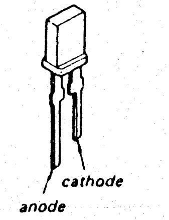
BA1A4M
BA1F4M
BA1L4M
BN1F4M


letter side
E C B

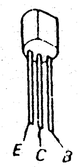
GP1A521



GL-9PG12


cathode
anode

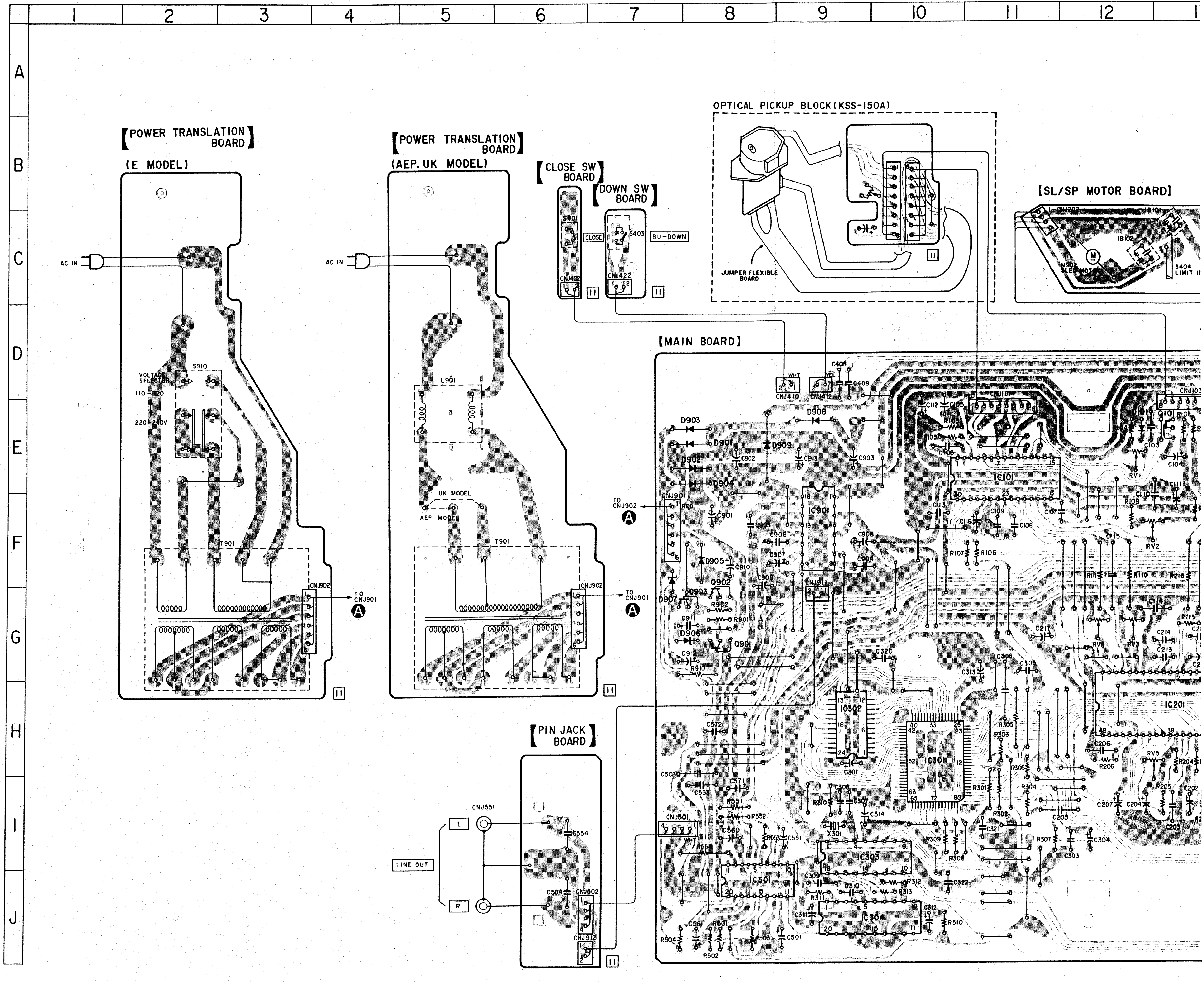
2SB1013



4-3. PRINTED WIRING BOARD

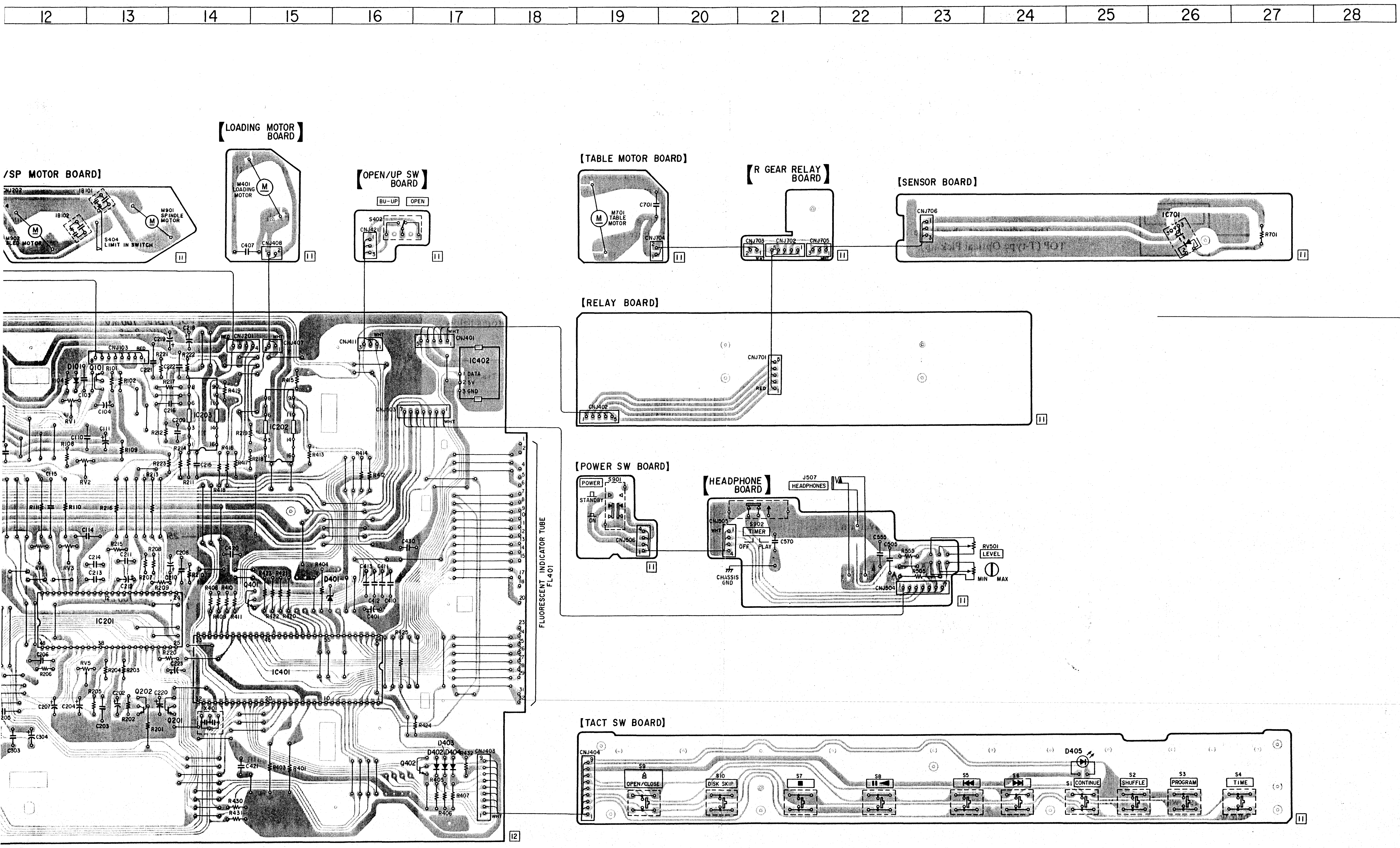
- See page 8 for Semiconductor lead layouts.
- Semiconductors Location

Ref. No.	Location
D101	E-12
D401	H-15
D403	J-17
D404	J-17
D405	J-17
D901	E-8
D902	E-8
D903	E-8
D904	E-8
D905	F-8
D906	G-8
D907	F-7
D908	E-9
D909	E-8
IC101	E-11
IC201	H-13
IC202	E-15
IC203	E-14
IC301	H-10
IC302	H-9
IC303	I-9
IC304	J-9
IC401	H-15
IC402	E-17
IC501	J-8
IC701	C-26
IC901	G-9
Q101	E-13
Q201	I-13
Q202	I-13
Q401	H-15
Q402	J-17
Q901	G-8
Q902	G-8
Q903	G-8

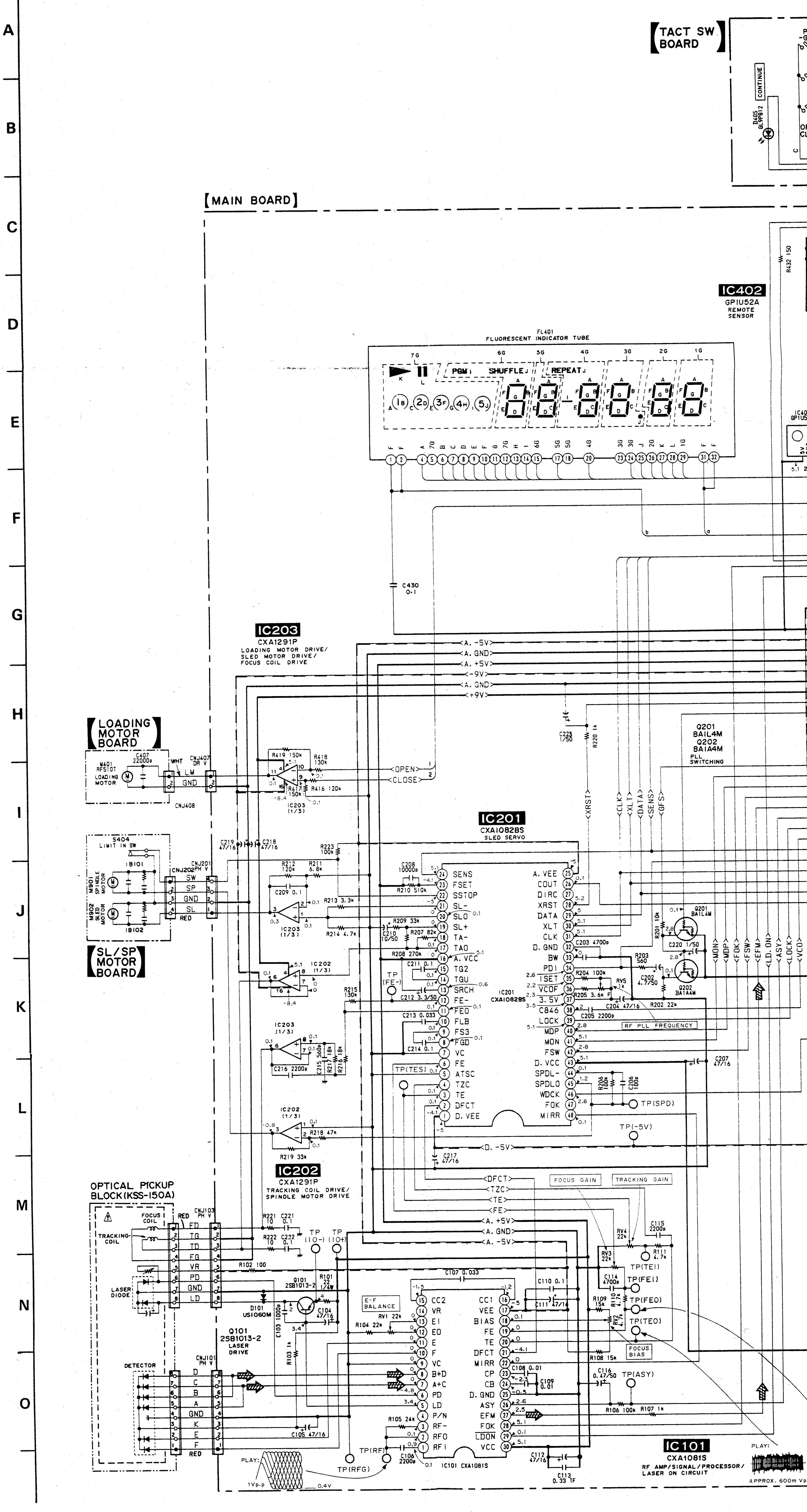

1
2
3
4
5
6
7
8
9
10
11
12
A
B
C
D
E
F
G
H
I
J
[POWER TRANSLATION BOARD]
(E MODEL)
AC IN
VOLTAGE SELECTOR
S910
110-120
220-240V
T901
CNJ902
TO CNJ901
A
[POWER TRANSLATION BOARD]
(AEP. UK MODEL)
L901
UK MODEL
AEP MODEL
[CLOSE SW BOARD]
S401
CLOSE
CNJ402
[DOWN SW BOARD]
S403
BU-DOWN
CNJ422
OPTICAL PICKUP BLOCK (KSS-150A)
JUMPER FLEXIBLE BOARD
[SL/SP MOTOR BOARD]
M902 SLED MOTOR
S404 LIMIT
[MAIN BOARD]
CNJ410
CNJ412
CNJ101
CNJ901
TO CNJ902
IC101
IC901
IC302
IC301
IC303
IC304
IC501
IC201
CNJ911
CNJ501
X301
[PIN JACK BOARD]
CNJ551
LINE OUT
L
R
CNJ502
CNJ912

Note on Printed Wiring Boards:

- ○—— : parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- [ ]- indicates side identified with part number.
- ○┬○ : Jumper wire connected to the ground pattern on the component side.


12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
/SP MOTOR BOARD]
M901 SPINDLE MOTOR
M902 SLED MOTOR
S404 LIMIT IN SWITCH
IB101
IB102
CNJ202
[LOADING MOTOR BOARD]
M401 LOADING MOTOR
C407
CNJ408
[OPEN/UP SW BOARD]
BU-UP
OPEN
S402
CNJ421
[TABLE MOTOR BOARD]
M701 TABLE MOTOR
C701
CNJ704
[R GEAR RELAY BOARD]
CNJ703
CNJ702
CNJ705
[SENSOR BOARD]
CNJ706
IC701
R701
[RELAY BOARD]
CNJ701
CNJ402
RED
[POWER SW BOARD]
POWER
S901
STANDBY
ON
CNJ506
[HEADPHONE BOARD]
J507
HEADPHONES
CNJ505
S902
TIMER
OFF
PLAY
C570
C555
C505
R555
R505
RV501
LEVEL
MIN
MAX
CNJ504
CHASSIS GND
[TACT SW BOARD]
CNJ404
D405
S9 OPEN/CLOSE
S10 DISK SKIP
S7 ■
S8 II◄
S5 ◄◄
S6 ►►
S1 CONTINUE
S2 SHUFFLE
S3 PROGRAM
S4 TIME
FLUORESCENT INDICATOR TUBE FL401
IC402
1 DATA
2 5V
3 GND
CNJ401
CNJ411
CNJ407
CNJ201
CNJ103
CNJ503
CNJ403
IC201
IC202
IC203
IC401
Q101
Q201
Q202
Q401
Q402
D101
D401
D402
D403
D404
RV1
RV2
RV3
RV4
RV5
WHT
12
11

4-4. SCHEMATIC DIAGRAM


1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
TACT SW BOARD
CONTINUE
MAIN BOARD
IC402
GP1U52A
REMOTE SENSOR
FL401
FLUORESCENT INDICATOR TUBE
PGM
SHUFFLE
REPEAT
C430 0.1
IC203
CXA1291P
LOADING MOTOR DRIVE/
SLED MOTOR DRIVE/
FOCUS COIL DRIVE
LOADING MOTOR BOARD
M401
RF510T
LOADING MOTOR
CNJ407
CNJ408
S404
LIMIT IN SW
M901
SPINDLE MOTOR
M902
SLED MOTOR
CNJ201
CNJ202
SL/SP MOTOR BOARD
<A. -5V>
<A. GND>
<A. +5V>
<-9V>
<A. GND>
<+9V>
<OPEN>
<CLOSE>
Q201
BA1L4M
Q202
BA1A4M
PLL SWITCHING
IC201
CXA1082BS
SLED SERVO
RF PLL FREQUENCY
TP(SPD)
TP(-5V)
<D. -5V>
IC202
CXA1291P
TRACKING COIL DRIVE/
SPINDLE MOTOR DRIVE
OPTICAL PICKUP BLOCK(KSS-150A)
FOCUS COIL
TRACKING COIL
LASER DIODE
DETECTOR
CNJ103
CNJ101
Q101
2SB1013-2
LASER DRIVE
D101
US1060M
E-F BALANCE
FOCUS GAIN
TRACKING GAIN
FOCUS BIAS
TP(TE)
TP(FE)
TP(FEO)
TP(TEO)
TP(ASY)
TP(RF)
TP(RFG)
TP(TES)
IC101
CXA1081S
RF AMP/SIGNAL/PROCESSOR/
LASER ON CIRCUIT
PLAY:
1Vp-p
0.4V
APPROX. 600m Vp

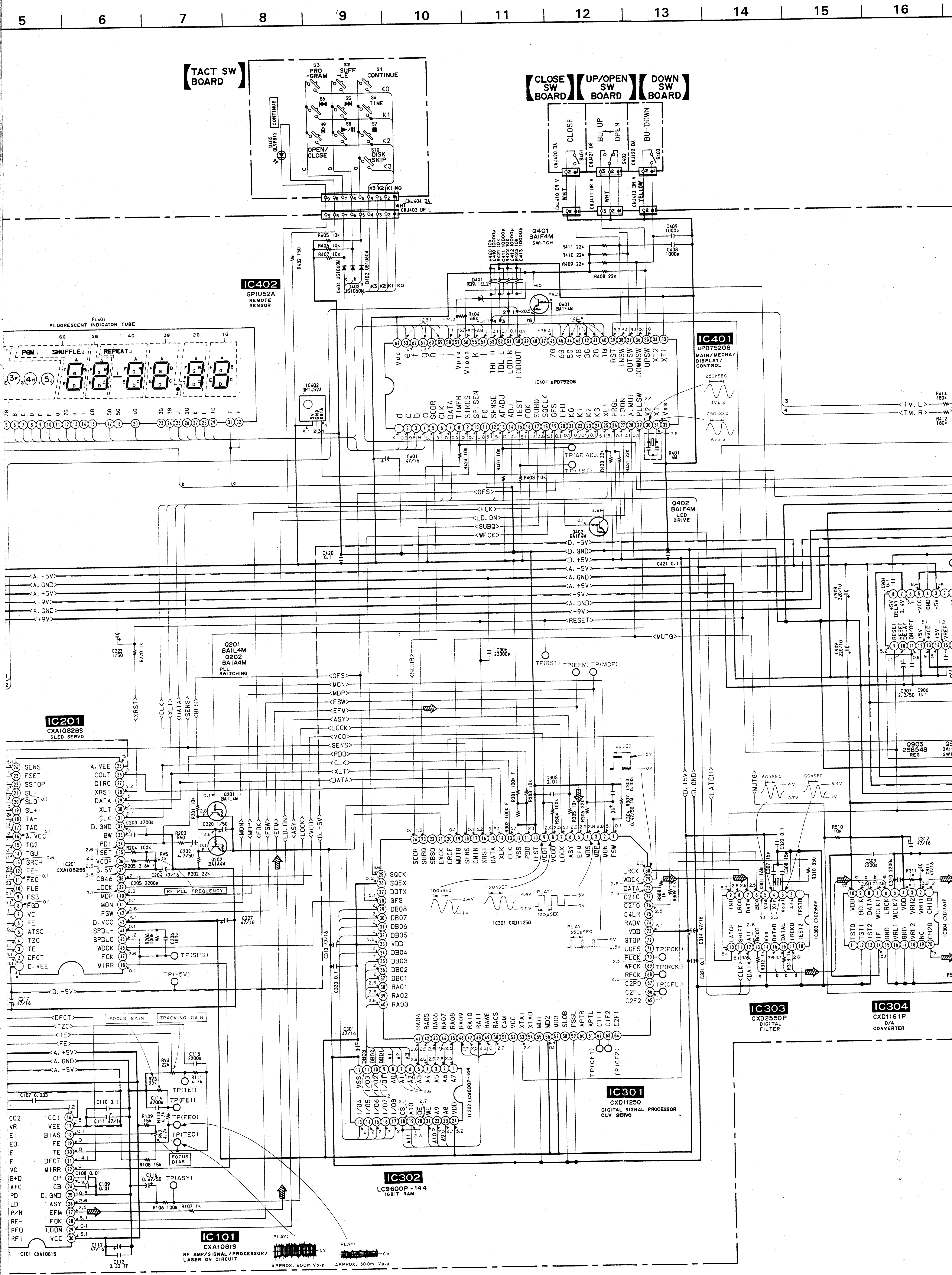
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note on Schematic Diagram:

- All capacitors are in µF unless otherwise noted. pF: µµF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- Components for right channel have same values as for left channel. Reference numbers are coded from
- △ : internal component.
- ▬▬ : B+ Line
- ▬ ▬ ▬ : B– Line
- ☐ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : STOP mode
- Voltages are taken with a VOM (50 kΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : CD

- Switch

Ref. No.	Switch	Position
S901	POWER	OFF
S902	TIMER	OFF
S401	CLOSE	OFF
S402	UP/OPEN	OPEN
S403	DOWN	OFF
S1 I S10	KEY MATRIX	OFF
S404	LIMIT IN	OFF



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12
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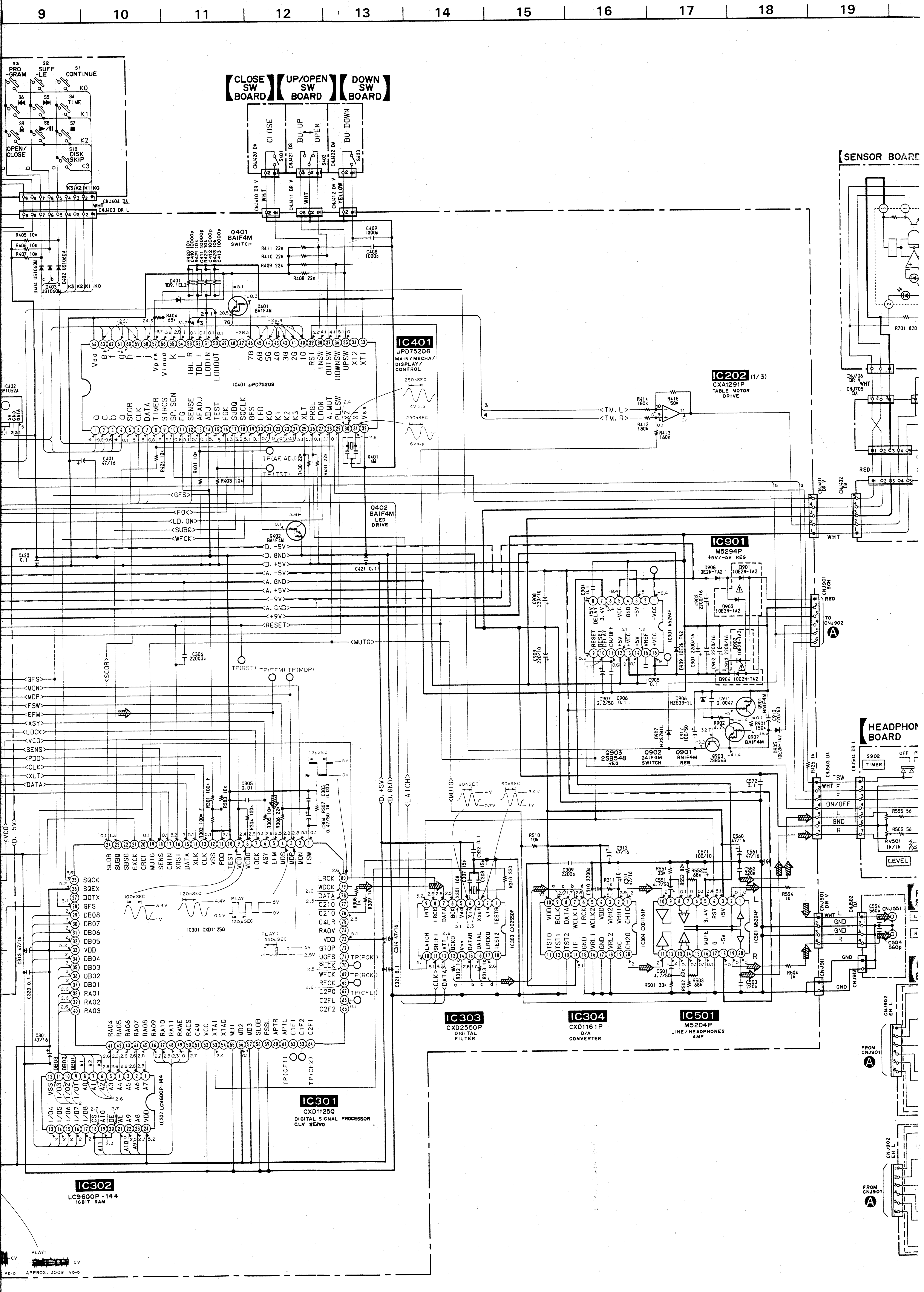
14
15
16
TACT SW BOARD
S3 PRO-GRAM
S2 SUFF-LE
S1 CONTINUE
S6
S5
S4 TIME
S9
S8
S7
OPEN/CLOSE
S10 DISK SKIP
K0
K1
K2
K3
CONTINUE
D405 GL9PB12
CNJ404 DA
CNJ403 DR L
WHT
CLOSE SW BOARD
UP/OPEN SW BOARD
DOWN SW BOARD
CLOSE
BU-UP
OPEN
BU-DOWN
S401
S402
S403
CNJ420 DA
CNJ421 DS
CNJ422 DA
CNJ410 DR V
CNJ411 DR V
CNJ412 DR V
WHT
WHT
YELLOW
C409 1000p
C408 1000p
R411 22k
R410 22k
R409 22k
R408 22k
Q401 BA1F4M SWITCH
R405 10k
R406 10k
R407 10k
R432 150
D404 US1060M
D403 US1060M
D402 US1060M
R420 10k
C410 10000p
C411 10000p
C412 10000p
C413 10000p
D401 RD9.1EL2
R404 68k
IC402
GP1U52A
REMOTE SENSOR
FL401
FLUORESCENT INDICATOR TUBE
PGM
SHUFFLE
REPEAT
IC401
μPD75208
MAIN/MECHA/DISPLAY/CONTROL
IC401 μPD75208
250nSEC
4Vp-p
250nSEC
6Vp-p
X401 4M
C401 47/16
R424 10k
R401 10k
R403 10k
R430 22k
R431 22k
TP(AF ADJ)
TP(TST)
<GFS>
<FOK>
<LD. ON>
<SUBQ>
<WFCK>
Q402 BA1F4M LED DRIVE
C420 0.1
C421 0.1
<D. -5V>
<D. GND>
<D. +5V>
<A. -5V>
<A. GND>
<A. +5V>
<-9V>
<A. GND>
<+9V>
<RESET>
<MUTG>
<TM. L>
<TM. R>
R414 180k
R412 180k
C223 1/50
R220 1k
Q201 BA1L4M
Q202 BA1A4M
PLL SWITCHING
<XRST>
<CLK>
<XLT>
<DATA>
<SENS>
<GFS>
C306 22000p
TP(RST)
TP(EFM)
TP(MDP)
<SCOR>
<GFS>
<MON>
<MDP>
<FSW>
<EFM>
<ASY>
<LOCK>
<VCO>
<SENS>
<PDO>
<CLK>
<XLT>
<DATA>
IC201
CXA1082BS
SLED SERVO
IC201 CXA1082BS
SENS
FSET
SSTOP
SL-
SLO
SL+
TA-
TAO
A. VCC
TG2
TGU
SRCH
FE-
FEO
FLB
FS3
FGD
VC
FE
ATSC
TZC
TE
DFCT
D. VEE
A. VEE
COUT
DIRC
XRST
DATA
XLT
CLK
D. GND
BW
PDI
ISET
VCOF
3.5V
C846
LOCK
MDP
MON
FSW
D. VCC
SPDL-
SPDLO
WDCK
FOK
MIRR
C203 4700p
R201 10k
C220 1/50
R203 560
C202 4.7/50
R204 100k
RV5 1k
R205 3.6k
C204 47/16
R202 22k
C205 2200p
RF PLL FREQUENCY
R206 100k
C206 100p
TP(SPD)
C207 47/16
TP(-5V)
<D. -5V>
C217 47/16
<MON>
<MDP>
<FOK>
<FSW>
<EFM>
<LD. ON>
<ASY>
<LOCK>
<VCO>
<D. -5V>
C305 0.01
R301 100k F
R303 10k
C303 0.033
C304 0.47/50 1M
R307
R302 100k F
R304 100k
R305 10k
R306 22k
12μSEC
5V
0V
<D. +5V>
<D. GND>
<LATCH>
<MUTG>
60nSEC
4V
0.7V
60nSEC
3.4V
1V
SCOR
SUBQ
SBSO
EXCK
CRCF
MUTG
SENS
CNIN
XRST
DATA
XLK
CLK
VSS
PDO
TEST
VCOI
VCOO
LOCK
ASY
EFM
MDS
MDP
MON
FSW
SQCK
SQEX
DOTX
GFS
DB08
DB07
DB06
DB05
VDD
DB04
DB03
DB02
DB01
RA01
RA02
RA03
RA04
RA05
RA06
RA07
RA08
RA09
RA10
RA11
RAWE
RACS
C4M
VCC
XTAO
MD1
MD2
MD3
SLOB
PSSL
APTL
C1F1
C1F2
C2F1
LRCK
WDCK
DATA
C210
C210
C4LR
RAOV
VDD
GTOP
UGFS
PLCK
WFCK
RFCK
C2PO
C2FL
C2F2
100nSEC
3.4V
1V
120nSEC
4.4V
0.5V
PLAY:
5V
0V
135μSEC
IC301 CXD1125Q
PLAY:
550μSEC
5V
2.5V
TP(PCK)
TP(RCK)
TP(CFL)
R308 1k
R309 1k
C313 47/16
C320 0.1
C314 47/16
C321 0.1
C301 47/16
TP(CF1)
TP(CF2)
IC301
CXD1125Q
DIGITAL SIGNAL PROCESSOR CLV SERVO
IC302 LC9600P-144
VSS
I/O3
I/O2
I/O1
A0
A1
A2
A3
A4
A5
A6
A7
VDD
I/O4
I/O5
I/O6
I/O7
I/O8
CS
A10
OE
WE
A9
A8
A11
IC302
LC9600P-144
16BIT RAM
R510 10k
C322 0.1
C307 15p
C308 15p
R310 330
X301 16M
R312 1k
R313 1k
IC303 CXD2550P
LATCH
SHIFT
AIT
BCKO
Vss
DATAR
DATAL
LRCKO
TEST2
INT
LRCK
DATA
BCK
Vdd
X1n
Xout
TESTR
<CLK>
<DATA>
IC303
CXD2550P
DIGITAL FILTER
C309 2200p
R311 1k
C310 2200p
C311 47/16
C312 47/16
IC304 CXD1161P
VDD
BCLK
DATA
WCLK1
WCLK2
VRH2
VRH1
CH1O
TST0
TST1
TST2
IF
GND
VRL1
GND
VRL2
NC
CH2O
IC304
CXD1161P
D/A CONVERTER
C908 220/10
C909 220/10
C907 2.2/50
C906 0.1
C904 0.1
+5V
DELAY
-VCC
GND
-5V
RESET
RESET
ON/OFF
+5V
+VCC
+5V
VREF
Q903 2SB548 REG
<DFCT>
<TZC>
<TE>
<EFM>
<A. +5V>
<A. GND>
<A. -5V>
FOCUS GAIN
TRACKING GAIN
RV4 22k
C115 2200p
RV3 22k
R111 4.7k
TP(TE1)
C114 4700p
TP(FE1)
C107 0.033
C110 0.1
C111 47/16
R109 15k
R110 4.7k
TP(FEO)
RV2 4.7k
TP(TEO)
FOCUS BIAS
R108 15k
C108 0.01
C109 0.01
C116 0.47/50
TP(ASY)
R106 100k
R107 1k
CC2
VR
EI
EO
E
F
VC
B+D
A+C
PD
LD
P/N
RF-
RFO
RFI
CC1
VEE
BIAS
FE
TE
DFCT
MIRR
CP
CB
D. GND
ASY
EFM
FOK
LDON
VCC
IC101 CXA1081S
C112 47/16
C113 0.33 1F
IC101
CXA1081S
RF AMP/SIGNAL/PROCESSOR/LASER ON CIRCUIT
PLAY:
CV
APPROX. 600m Vp-p
PLAY:
CV
APPROX. 300m Vp-p


9
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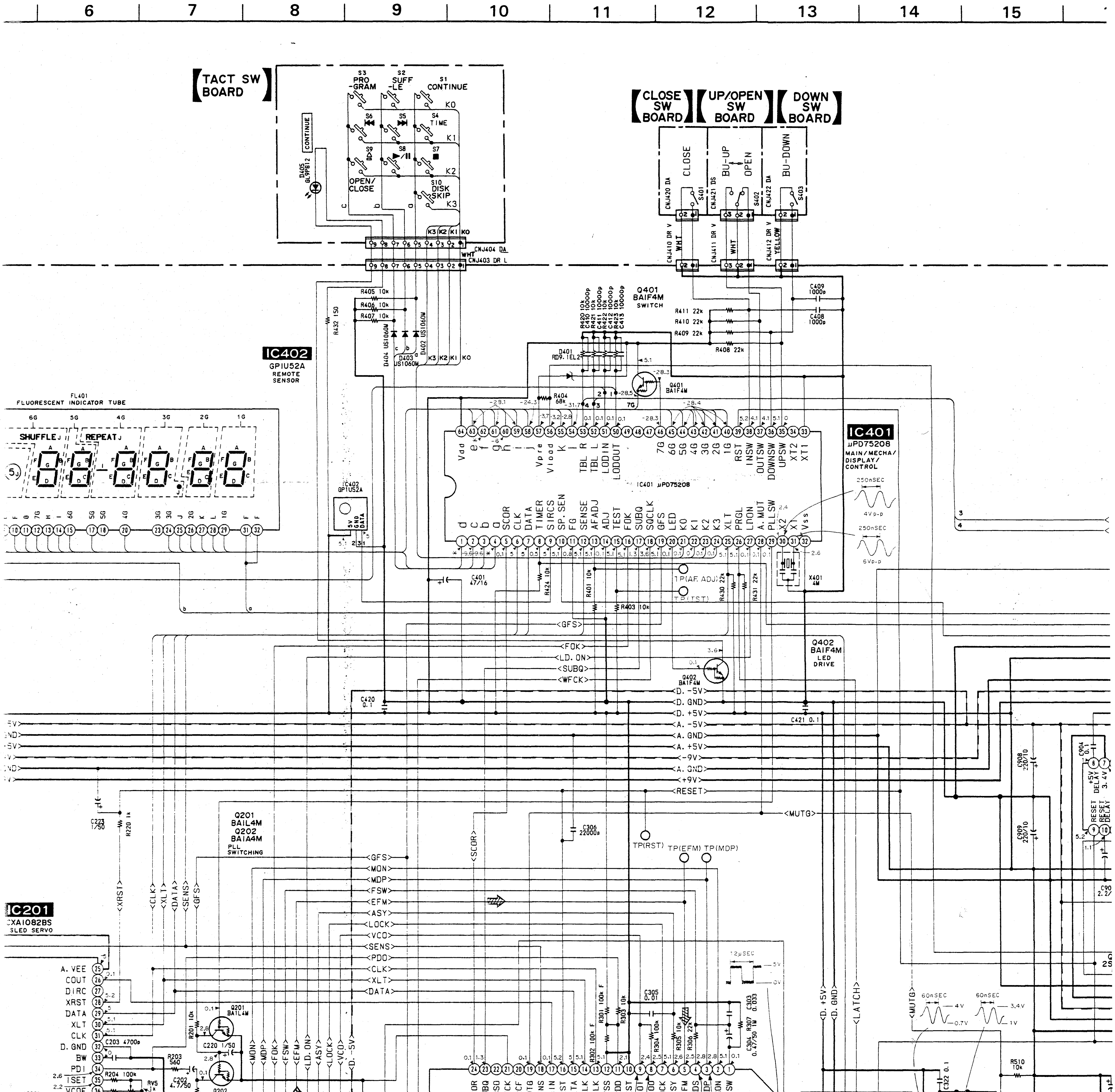
19
CLOSE SW BOARD
UP/OPEN SW BOARD
DOWN SW BOARD
SENSOR BOARD
S3 PRO-GRAM
S2 SUFF-LE
S1 CONTINUE
S4 TIME
S7 ■
S8 ▶/II
S10 DISK SKIP
OPEN/CLOSE
CLOSE
BU-UP
OPEN
BU-DOWN
S401
S402
S403
CNJ404 DA
CNJ403 DR L
Q401 BA1F4M SWITCH
IC401 µPD75208 MAIN/MECHA/DISPLAY/CONTROL
IC401 µPD75208
X401 4M
250nSEC
TP(AF. ADJ)
TP(TST)
IC202 (1/3) CXA1291P TABLE MOTOR DRIVE
<TM. L>
<TM. R>
Q402 BA1F4M LED DRIVE
<GFS>
<FOK>
<LD. ON>
<SUBQ>
<WFCK>
<D. -5V>
<D. GND>
<D. +5V>
<A. -5V>
<A. GND>
<A. +5V>
<-9V>
<A. GND>
<+9V>
<RESET>
<MUTG>
<SCOR>
TP(RST)
TP(EFM)
TP(MDP)
<GFS>
<MON>
<MDP>
<FSW>
<EFM>
<ASY>
<LOCK>
<VCO>
<SENS>
<PDO>
<CLK>
<XLT>
<DATA>
<VCO>
<D. -5V>
<D. +5V>
<D. GND>
<LATCH>
<MUTG>
IC901 M5294P +5V/-5V REG
Q903 2SB548 REG
Q902 BA1F4M SWITCH
Q901 BN1F4M REG
CNJ401
CNJ402
CNJ901 SCN
TO CNJ902
A
HEADPHONE BOARD
S902 TIMER
TSW
WHT
F
ON/OFF
L
GND
R
LEVEL
IC301 CXD1125Q
IC303 CXD2550P DIGITAL FILTER
IC304 CXD1161P D/A CONVERTER
IC501 M5204P LINE/HEADPHONES AMP
IC301 CXD1125Q DIGITAL SIGNAL PROCESSOR CLV SERVO
IC302 LC9600P-144 16BIT RAM
TP(CF1)
TP(CF2)
TP(PCK)
TP(RCK)
TP(CFL)
FROM CNJ901
A
PLAY:
APPROX. 300m Vp-p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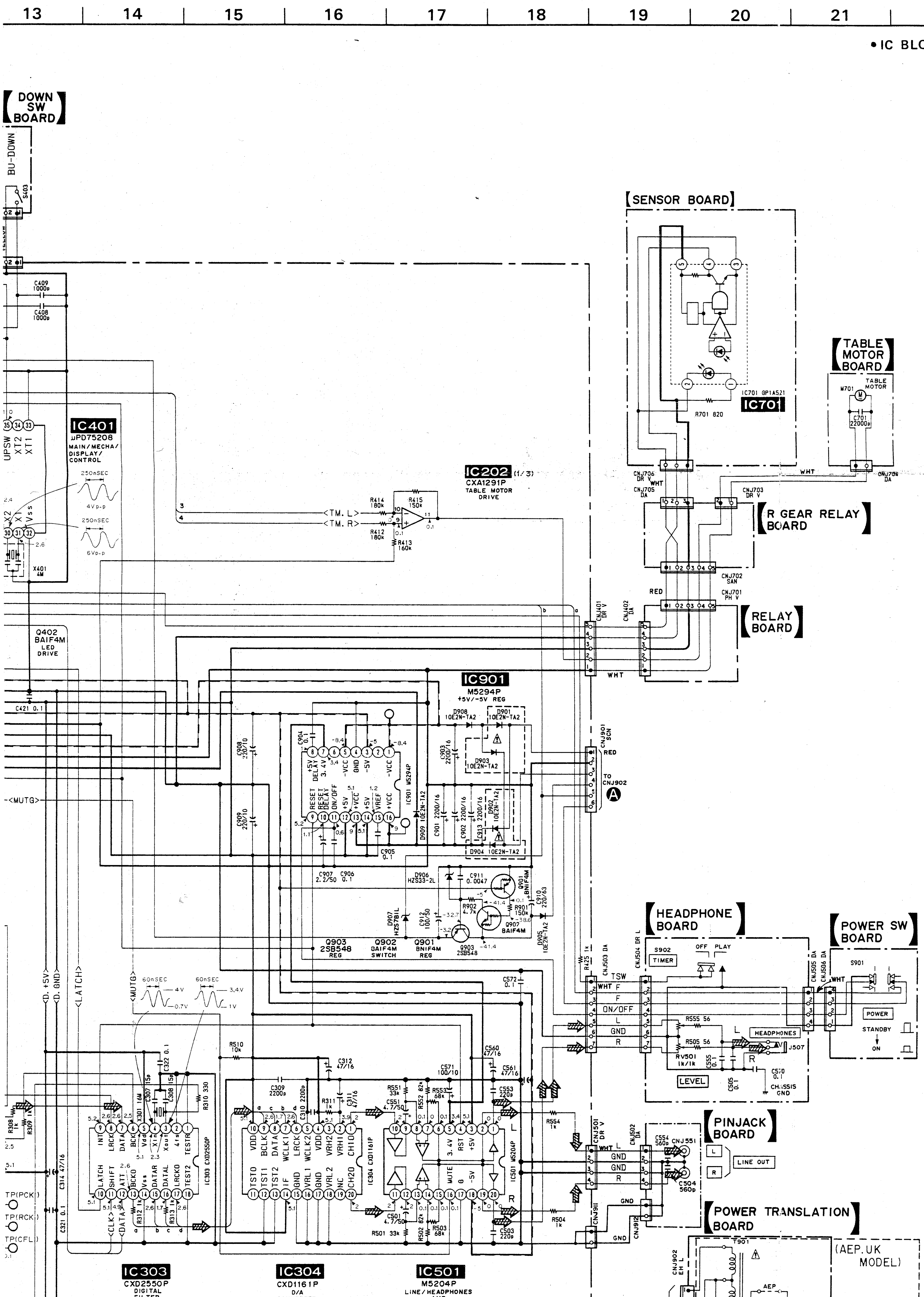
13
14
15
TACT SW BOARD
S3 PRO-GRAM
S2 SUFF-LE
S1 CONTINUE
S4 TIME
S6
S5
S9
S8
S7
OPEN/CLOSE
S10 DISK SKIP
K0
K1
K2
K3
CONTINUE
D405 BL-97B12
CNJ404 DA
CNJ403 DR L
WHT
CLOSE SW BOARD
UP/OPEN SW BOARD
DOWN SW BOARD
CLOSE
BU-UP
OPEN
BU-DOWN
CNJ420 DA
CNJ421 DS
CNJ422 DA
S401
S402
S403
CNJ410 DR V
CNJ411 DR V
CNJ412 DR V
YELLOW
C409 1000p
C408 1000p
R411 22k
R410 22k
R409 22k
R408 22k
Q401 BAIF4M SWITCH
R405 10k
R406 10k
R407 10k
R432 150
D404 US1060M
D403 US1060M
D402 US1060M
D401 RD9.1EL2
R404 68k
IC402
GP1U52A
REMOTE SENSOR
FL401 FLUORESCENT INDICATOR TUBE
SHUFFLE
REPEAT
6G
5G
4G
3G
2G
1G
IC401
μPD75208
MAIN/MECHA/DISPLAY/CONTROL
IC401 μPD75208
Vdd
Vpre
Vload
TBL R
TBL L
LODIN
LODOUT
7G
6G
5G
4G
3G
2G
1G
RST
INSW
OUTSW
DOWNSW
UPSW
XT2
XT1
SCOR
CLK
DATA
TIMER
SIRCS
SP. SEN
FG
SENSE
AFADJ
ADJ
TEST
FOK
SUBQ
SQCLK
GFS
LED
K0
K1
K2
K3
XLT
PRGL
LDON
A. MUT
PLL SW
X2
X1
Vss
250nSEC
4Vp-p
6Vp-p
X401 4M
C401 47/16
R424 10k
R401 10k
R403 10k
R430 22k
R431 22k
TP(AF. ADJ)
TP(TEST)
Q402 BAIF4M LED DRIVE
<GFS>
<FOK>
<LD. ON>
<SUBQ>
<WFCK>
<D. -5V>
<D. GND>
<D. +5V>
<A. -5V>
<A. GND>
<A. +5V>
<-9V>
<A. GND>
<+9V>
<RESET>
<MUTG>
C420 0.1
C421 0.1
C223 1/50
R220 1k
C306 22000p
TP(RST)
TP(EFM)
TP(MDP)
Q201 BAIL4M
Q202 BAIA4M
PLL SWITCHING
<XRST>
<CLK>
<XLT>
<DATA>
<SENS>
<GFS>
<SCOR>
<MON>
<MDP>
<FSW>
<EFM>
<ASY>
<LOCK>
<VCO>
<SENS>
<PDO>
<CLK>
<XLT>
<DATA>
IC201
CXA1082BS
SLED SERVO
A. VEE
COUT
DIRC
XRST
DATA
XLT
CLK
D. GND
BW
PDI
ISET
VCOF
3.5V
C846
LOCK
MDP
MON
FSW
D. VCC
SPDL-
SPDLO
WDCK
FOK
MIRR
IC201 CXA1082BS
R201 10k
C220 1/50
C203 4700p
R203 560
R204 100k
RV5 1k
R205 3.6k
C202 4.7/50
C204 47/16
R202 22k
C205 2200p
RF PLL FREQUENCY
C207 47/16
R206 100k
C206 100p
TP(SPD)
TP(-5V)
<D. -5V>
<LD. ON>
12μSEC
5V
0V
C305 0.01
R301 100k
R303 10k
R305 10k
R306 22k
R304 100k
R302 100k
C303 0.033
R307 0.47/50 1M
C304
SCOR
SUBQ
SBSO
EXCK
CRCF
MUTG
SENS
CNIN
XRST
DATA
XLK
CLK
VSS
PDO
TEST
VCOI
VCOO
LOCK
ASY
EFM
MDS
MDP
MON
FSW
SQCK
SQEX
DOTX
GFS
DB08
DB07
DB06
DB05
VDD
DB04
DB03
DB02
DB01
RA01
RA02
RA03
LRCK
WDCK
DATA
C210
C210
C4LR
RAOV
VDD
GTOP
UGFS
PLCK
WFCK
RFCK
C2PO
C2FL
C2F2
RA04
RA05
RA06
RA07
RA08
RA09
RA10
RA11
RAWE
RACS
C4M
VDD
XTAI
XTAO
MD1
MD2
MD3
SLOB
PSSL
APTR
APTL
C1F1
C1F2
C2F1
100nSEC
3.4V
1V
120nSEC
4.4V
0.5V
PLAY:
5V
0V
135μSEC
IC301 CXD1125Q
PLAY: 550μSEC
5V
2.5V
TP(PCK)
TP(RCK)
TP(CFL)
TP(CF1)
TP(CF2)
R308 1k
R309 1k
C313 47/16
C320 0.1
C314 47/16
C321 0.1
C301 47/16
<D. +5V>
<D. GND>
<LATCH>
<MUTG>
60nSEC
4V
0.7V
3.4V
1V
R510 10k
C322 0.1
C307 15p
C308 15p
X301 16M
R310 330
R312 1k
R313 1k
INT
LATCH
SHIFT
LRCK
ATT
DATA
BCK
BCKO
Vdd
Vss
X1
DATAR
Xout
DATAL
LRCKO
TEST2
TEST1
IC303 CXD2550P
<CLK>
<DATA>
C309 2200p
C310 2200p
VDD
BCLK
DATA
WCLK1
LRCK
VDD
TST0
TST1
TST2
IF
GND
VRL1
WCLK2
GND
VRH2
VRL2
C904 0.1
C908 220/10
C909 220/10
+5V DELAY
RESET DELAY
IC303
CXD2550P
DIGITAL FILTER
IC304
CXD1161P
D/A CONVERTER
VSS
I/04
I/05
I/06
I/07
I/08
I/01
I/02
I/03
A0
A1
A2
A3
A4
A5
A6
A7
CS
A10
OE
WE
A11
A9
A8
VDD
IC302 LC9600P-144
IC301
CXD1125Q
DIGITAL SIGNAL PROCESSOR CLV SERVO
IC302
LC9600P-144
16BIT RAM
FOCUS GAIN
TRACKING GAIN
<DFCT>
<FZC>
<TE>
<FE>
<A. +5V>
<A. GND>
<A. -5V>
RV4 22k
RV3 22k
C115 2200p
R111 4.7k
TP(TEI)
C114 4700p
TP(FEI)
TP(FEO)
TP(TEO)
R109 15k
R110 1k
RV2 4.7k
C110 0.1
C111 47/16
R108 15k
FOCUS BIAS
C108 0.01
C109 0.01
C116 0.47/50
TP(ASY)
R106 100k
R107 1k
C112 47/16
C113 0.33 TF
IC101
CXA1081S
RF AMP/SIGNAL/PROCESSOR/LASER ON CIRCUIT
PLAY:
CV
APPROX. 600m Vp-p
APPROX. 300m Vp-p


13
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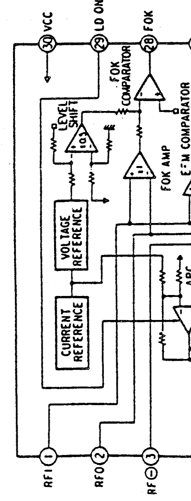
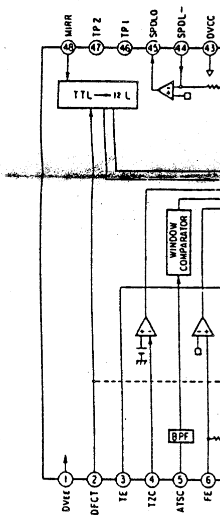
21
22
23
24
DOWN SW BOARD
BU-DOWN
S403
C409 1000p
C408 1000p
IC401
μPD75208
MAIN/MECHA/DISPLAY/CONTROL
250nSEC
4Vp-p
6Vp-p
UPSW
XT2
XT1
X2
X1
Vss
X401 4M
Q402 BAIF4M LED DRIVE
C421 0.1
<MUTG>
<D.+5V>
<D.GND>
<LATCH>
<CLK>
<DATA>
TP(PCK)
TP(RCK)
TP(CFL)
IC202 (1/3)
CXA1291P
TABLE MOTOR DRIVE
<TM. L>
<TM. R>
R414 180k
R415 150k
R412 180k
R413 160k
SENSOR BOARD
IC701 GP1A521
IC701
R701 820
TABLE MOTOR BOARD
M701
TABLE MOTOR
C701 22000p
CNJ706 DR V
WHT
CNJ705 DA
CNJ704 DA
CNJ703 DR V
R GEAR RELAY BOARD
CNJ702 SAN
CNJ701 PH V
RED
RELAY BOARD
CNJ401 DR V
CNJ402 DA
IC901
M5294P
+5V/-5V REG
D908 10E2N-TA2
D901 10E2N-TA2
D903 10E2N-TA2
D902 10E2N-TA2
D904 10E2N-TA2
D909 10E2N-TA2
C904 0.1
C903 2200/16
C908 220/10
C909 220/10
C901 2200/16
C902 2200/16
C913 2200/16
C905 0.1
C907 2.2/50
C906 0.1
D906 HZS33-2L
C911 0.0047
D907 HZS7BIL
C912 100/50
R902 4.7k
R901 150k
Q901 BNIF4M
Q902 BAIF4M
Q903 2SB548
C910 220/63
D905 10E2N-TA2
Q903 2SB548 REG
Q902 BAIF4M SWITCH
Q901 BNIF4M REG
CNJ901 SGN
TO CNJ902
A
60nSEC
4V
0.7V
3.4V
1V
<MUTG>
R510 10k
C312 47/16
C309 2200p
C310 2200p
C311 47/16
R311 1k
C571 100/10
C560 47/16
C561 47/16
R551 33k
R552 82k
R553 68k
C551 4.7/50
C553 220p
C572 0.1
R554 1k
R504 1k
R501 33k
R502 82k
R503 68k
C501 4.7/50
C503 220p
C307 15p
C308 15p
C322 0.1
X301 16M
R310 330
R308
R309 1k
R312 1k
R313 1k
C314 47/16
C321 0.1
IC303
CXD2550P
DIGITAL FILTER
IC304
CXD1161P
D/A CONVERTER
IC501
M5204P
LINE/HEADPHONES AMP
HEADPHONE BOARD
S902
TIMER
OFF PLAY
R425 1k
CNJ503 DA
CNJ504 DR L
TSW
WHT F
F
ON/OFF
L
GND
R
R555 56
R505 56
RV501 1k/1k
C555 0.1
C505 0.1
LEVEL
HEADPHONES
J507
C510 0.1
CHASSIS GND
POWER SW BOARD
CNJ505 DA
CNJ506 DA
S901
POWER
STANDBY
ON
CNJ501 DR V
CNJ502 DA
C554 560p
C504 560p
CNJ551
PINJACK BOARD
L
R
LINE OUT
CNJ911
CNJ912
POWER TRANSLATION BOARD
T901
(AEP.UK MODEL)
AEP
UK
L910
AC IN
CNJ902 EH L
FROM CNJ901
A
(E MODEL)
S910 VOLTAGE SELECTOR
220-240V
110-120V
ESSOR

• IC BLOCK DIAGRAMS.

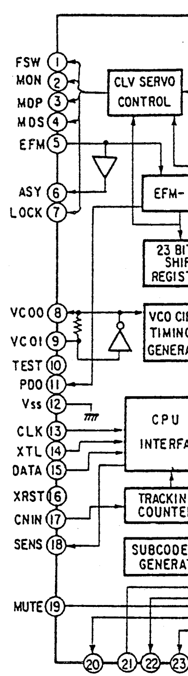
IC101
CXA1081S


VCC
LD ON
FOK
FOK COMPARATOR
LEVEL SHIFT
FOK AMP
EFM COMPARATOR
VOLTAGE REFERENCE
CURRENT REFERENCE
RFI
RFO
RF

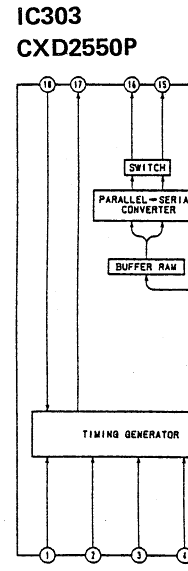
IC201
CXA1082BS


MIRR
TP2
TP1
SPDLO
SPDL-
DVCC
TTL
WINDOW COMPARATOR
BPF
DVEE
DFCT
TE
TZC
ATSC
FE

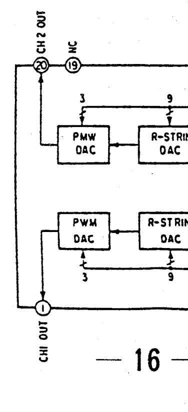
IC301
CXD1125Q

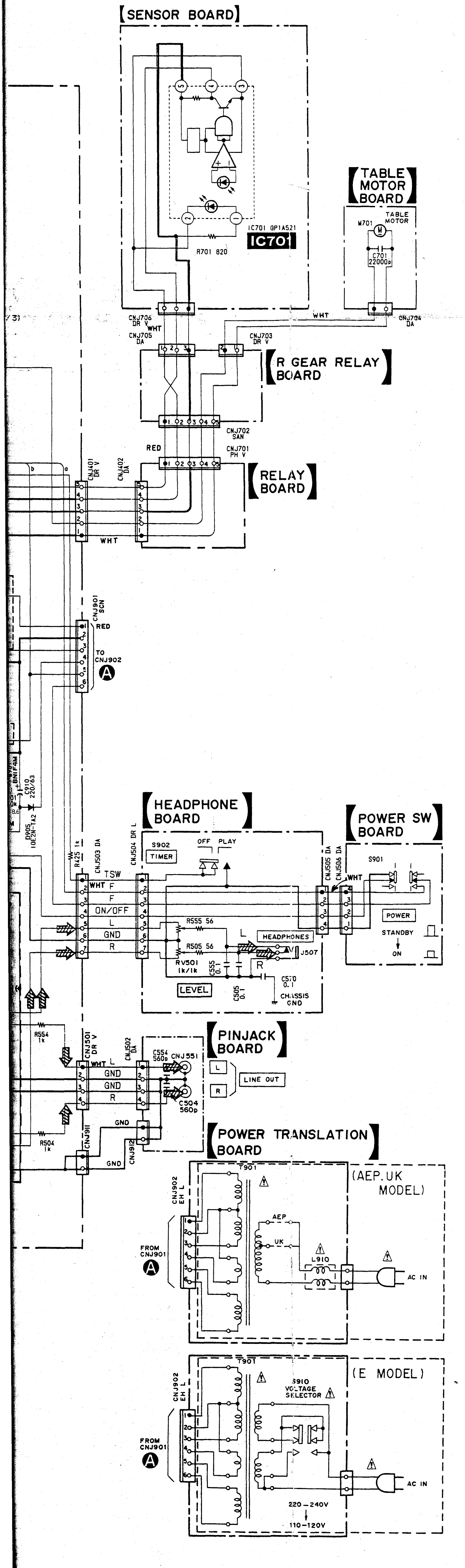

FSW
MON
MDP
MDS
EFM
ASY
LOCK
VCO0
VCO1
TEST
PDO
Vss
CLK
XTL
DATA
XRST
CNIN
SENS
MUTE
CLV SERVO CONTROL
EFM
23 BIT SHIFT REGISTER
VCO TIMING GENERA
CPU INTERFA
TRACKING COUNTER
SUBCODE GENERAT
CRCF
EXCK
SBSO
SUB

IC303
CXD2550P


SWITCH
PARALLEL-SERIAL CONVERTER
BUFFER RAM
TIMING GENERATOR

IC304
CXD1161P-2

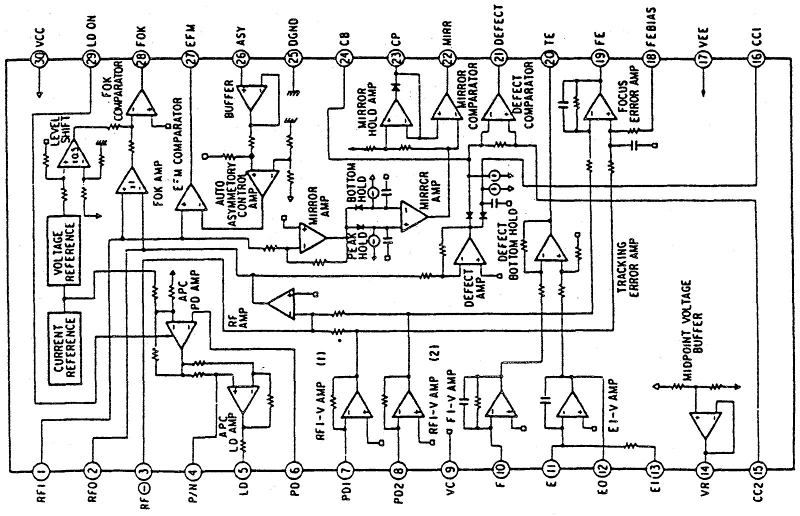

CH2 OUT
NC
PWM DAC
R-STRING DAC
CH1 OUT



【SENSOR BOARD】
IC701 GP1A521
IC701
R701 820
【TABLE MOTOR BOARD】
M701 TABLE MOTOR
C701 22000p
【R GEAR RELAY BOARD】
【RELAY BOARD】
CNJ706 DR V
CNJ705 DA
CNJ703 DR V
CNJ704 DA
CNJ702 SAN
CNJ701 PH V
CNJ401 DR V
CNJ402 DA
WHT
RED
TO CNJ902
A
【HEADPHONE BOARD】
S902 TIMER
OFF PLAY
TSW
WHT F
F
ON/OFF
L
GND
R
R555 56
R505 56
RV501 1k/1k
LEVEL
HEADPHONES
J507
C570 0.1
CHASSIS GND
【POWER SW BOARD】
S901
POWER
STANDBY
ON
【PINJACK BOARD】
CNJ551
C554 560p
C504 560p
LINE OUT
L
R
GND
CNJ501 DR V
CNJ502 DA
CNJ911
CNJ912
R554 1k
R504 1k
R425 1k
【POWER TRANSLATION BOARD】
T901
(AEP.UK MODEL)
AEP
UK
L910
AC IN
FROM CNJ901
A
CNJ902 EH L
(E MODEL)
S910 VOLTAGE SELECTOR
220—240V
110—120V

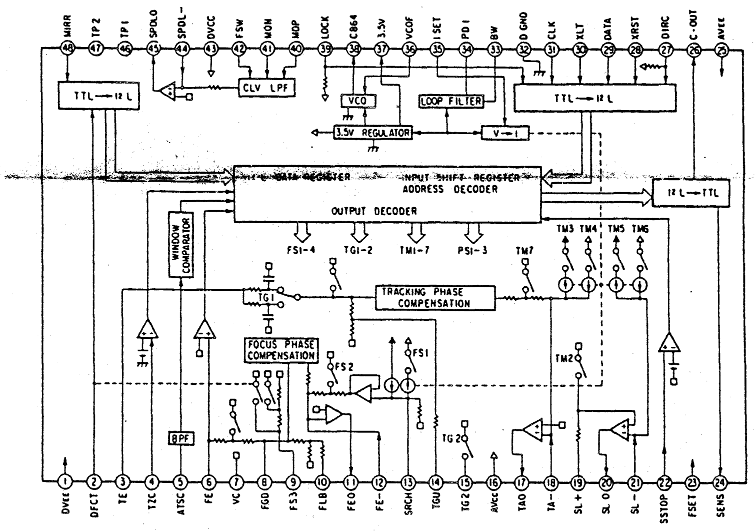
• IC BLOCK DIAGRAMS.

IC101
CXA1081S



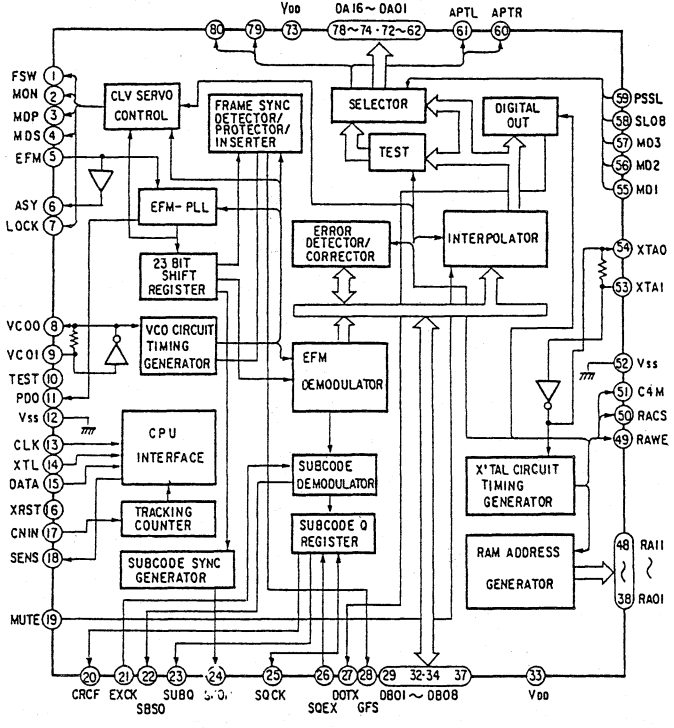
VCC
LD ON
FOK
EFM
ASY
DGND
CB
CP
MIRR
DEFECT
TE
FE
FE BIAS
VEE
CC1
LEVEL SHIFT
FOK COMPARATOR
EFM COMPARATOR
FOK AMP
BUFFER
AUTO ASYMMETRY CONTROL AMP
MIRROR HOLD AMP
MIRROR COMPARATOR
DEFECT COMPARATOR
FOCUS ERROR AMP
VOLTAGE REFERENCE
CURRENT REFERENCE
APC PD AMP
RF AMP
APC LD AMP
MIRROR AMP
PEAK HOLD
BOTTOM HOLD
DEFECT AMP
DEFECT BOTTOM HOLD
TRACKING ERROR AMP
MIDPOINT VOLTAGE BUFFER
RFI-V AMP (1)
RFI-V AMP (2)
F I-V AMP
E I-V AMP
RFI
RFO
RF
P/N
LD
PD
PD1
PD2
VC
F
E
EO
EI
VR
CC2

IC201
CXA1082BS



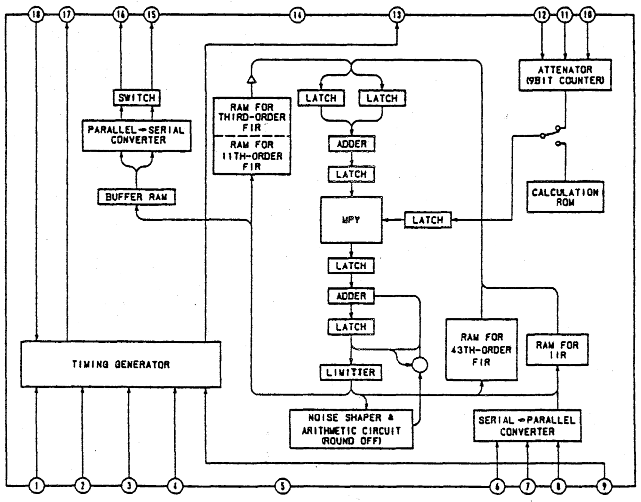
MIRR
TP2
TP1
SPDLO
SPDL-
DVCC
FSW
MON
MDP
LOCK
C864
3.5V
VCOF
ISET
PD1
BW
D GND
CLK
XLT
DATA
XRST
DIRC
C.OUT
AVEE
TTL→I²L
CLV LPF
VCO
LOOP FILTER
3.5V REGULATOR
V→I
DATA REGISTER
INPUT SHIFT REGISTER
ADDRESS DECODER
OUTPUT DECODER
I²L→TTL
WINDOW COMPARATOR
TRACKING PHASE COMPENSATION
FOCUS PHASE COMPENSATION
BPF
DVEE
DFCT
TE
TZC
ATSC
VC
FGD
FS3
FLB
FEO
FE-
SRCH
TGU
TG2
AREC
TAO
TA-
SL+
SLO
SL-
SSTOP
FSET
SENS

IC301
CXD1125Q



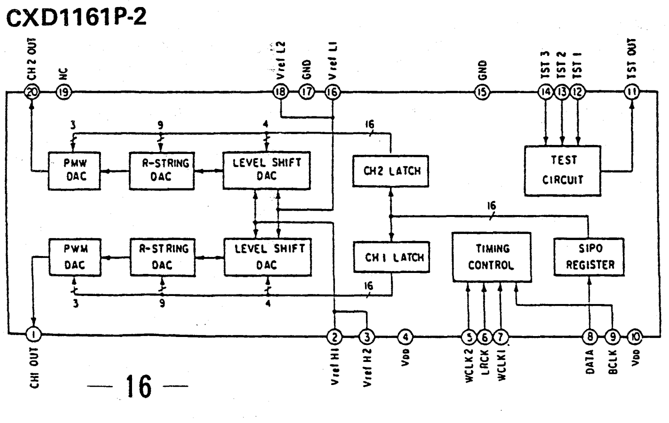
VDD
DA16～DA01
APTL
APTR
FSW
MON
MDP
MDS
EFM
ASY
LOCK
VCOO
VCOI
TEST
PDO
Vss
CLK
XTL
DATA
XRST
CNIN
SENS
MUTE
CLV SERVO CONTROL
FRAME SYNC DETECTOR/ PROTECTOR/ INSERTER
SELECTOR
TEST
DIGITAL OUT
EFM-PLL
ERROR DETECTOR/ CORRECTOR
INTERPOLATOR
23 BIT SHIFT REGISTER
VCO CIRCUIT TIMING GENERATOR
EFM DEMODULATOR
CPU INTERFACE
SUBCODE DEMODULATOR
TRACKING COUNTER
SUBCODE Q REGISTER
SUBCODE SYNC GENERATOR
X'TAL CIRCUIT TIMING GENERATOR
RAM ADDRESS GENERATOR
PSSL
SLOB
MD3
MD2
MD1
XTAO
XTAI
Vss
C4M
RACS
RAWE
RA11
RA01
CRCF
EXCK
SUBQ
SBSO
SOCK
DOTX
SQEX
GFS
DB01～DB08
VDD

IC303
CXD2550P



VSS
VCC
SWITCH
PARALLEL→SERIAL CONVERTER
BUFFER RAM
RAM FOR THIRD-ORDER FIR
RAM FOR 11TH-ORDER FIR
LATCH
ADDER
MPY
LIMITTER
ATTENATOR (9BIT COUNTER)
CALCULATION ROM
RAM FOR 43TH-ORDER FIR
RAM FOR IIR
TIMING GENERATOR
NOISE SHAPER & ARITHMETIC CIRCUIT (ROUND OFF)
SERIAL→PARALLEL CONVERTER

IC304
CXD1161P-2



CH2 OUT
NC
Vref L2
GND
Vref L1
GND
TST3
TST2
TST1
TST OUT
PWM DAC
R-STRING DAC
LEVEL SHIFT DAC
CH2 LATCH
TEST CIRCUIT
CH1 LATCH
TIMING CONTROL
SIPO REGISTER
CH1 OUT
Vref H1
Vref H2
VDD
WCLK2
LRCK
WCLK1
DATA
BCLK
VDD

SECTION 5
EXPLODED VIEWS

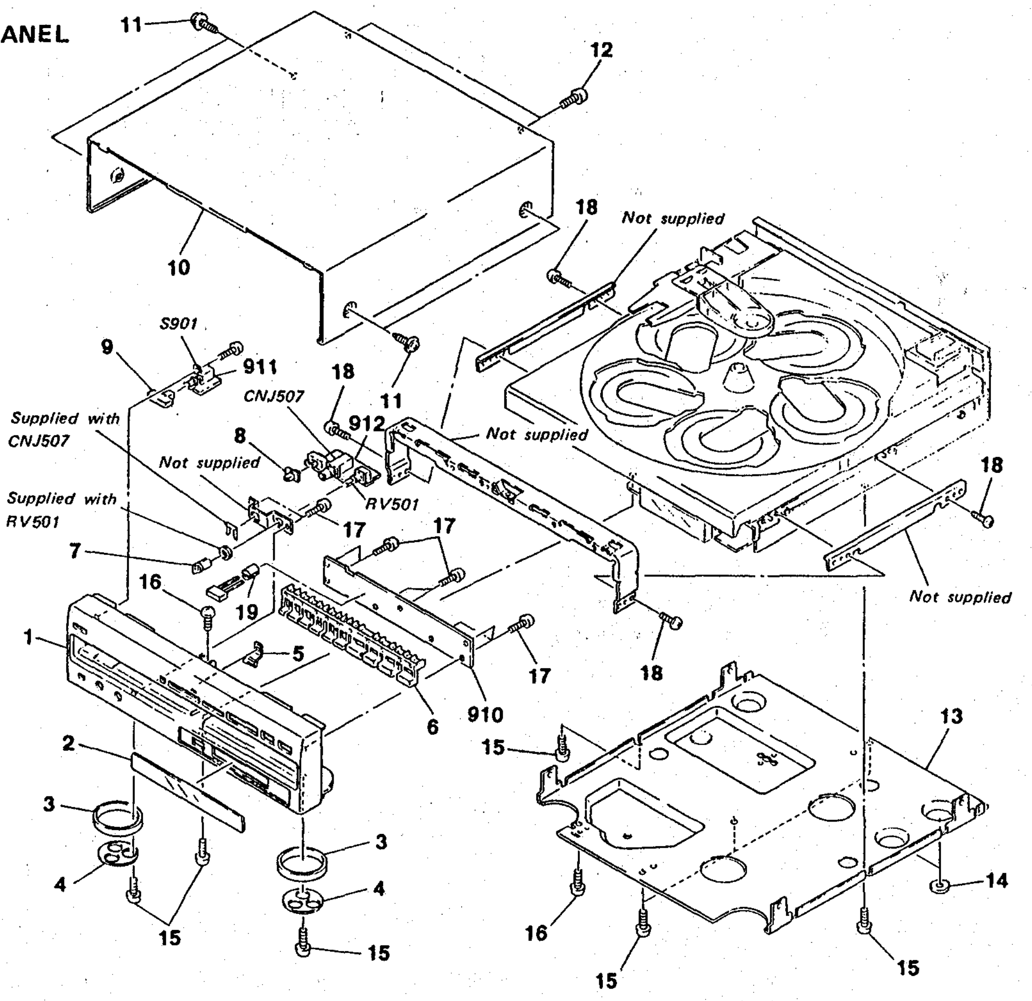
NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts Example:

  (RED) . . . KNOB, BALANCE (WHITE)
  ↑ ↑
  Cabinet's Color Parts Color

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

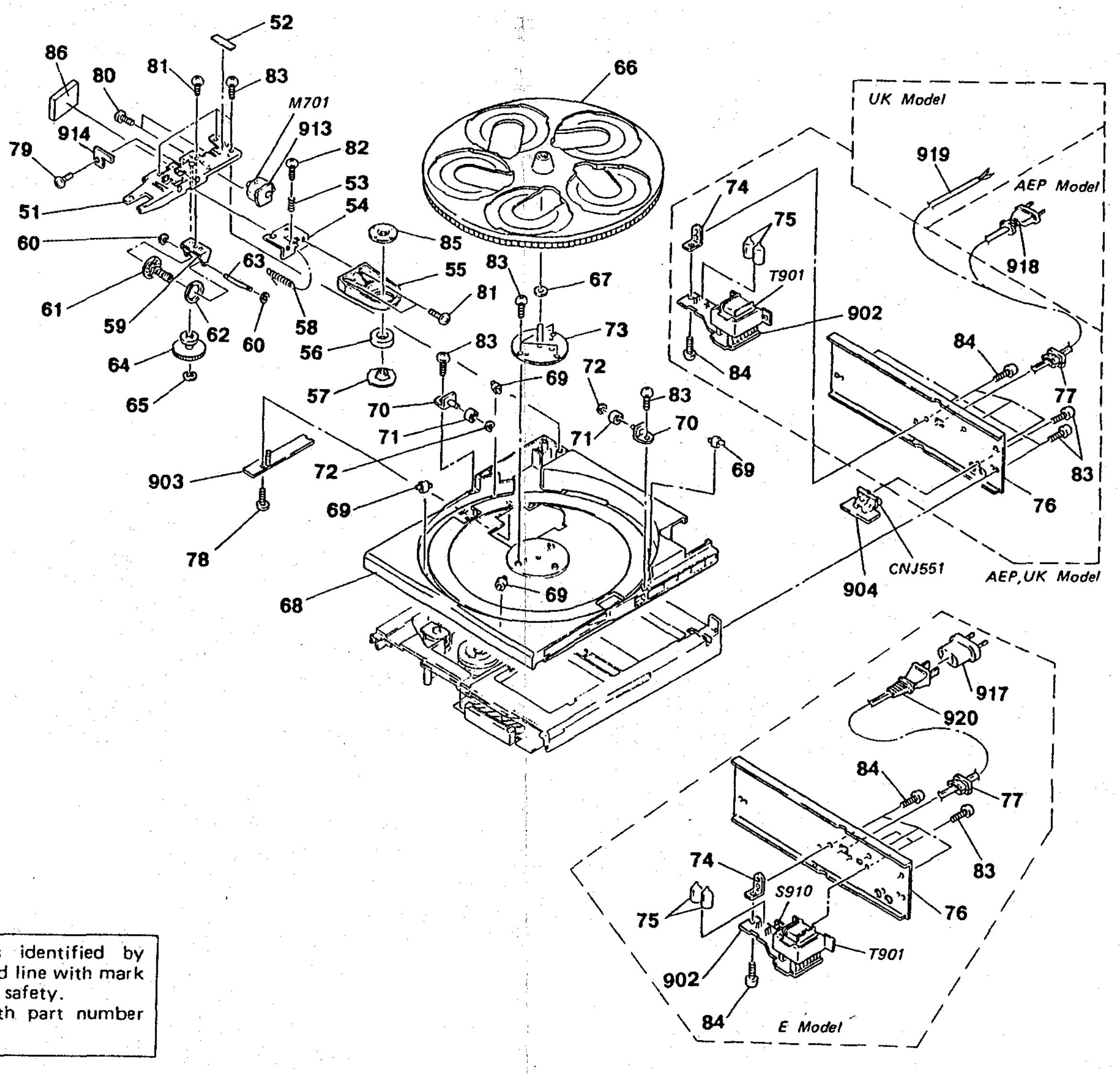
1. FRONT PANEL


11
12
10
18
Not supplied
S901
9
911
18
CNJ507
11
912
Supplied with CNJ507
8
Not supplied
Not supplied
Supplied with RV501
RV501
17
17
18
7
16
19
1
5
17
18
Not supplied
910
6
13
2
15
3
3
4
4
14
16
15
15
15
15

No.	Part No.	Description	Remarks
1	4-930-530-11	(BLACK:AEP,UK)....PANEL, FRONT	
	4-930-530-21	(GRAY:AEP,UK,E)...PANEL, FRONT	
2	4-930-526-01	PLATE, INDICATION	
3	4-921-918-01	(BLACK:AEP,UK)...PLATE, ORNAMENTAL	
4	4-921-906-01	FELT	
5	4-930-525-01	PLATE (MODE), INDICATION	
6	4-930-529-01	(BLACK:AEP,UK)....BUTTON	
	4-930-529-11	(GRAY:AEP,UK,E)...BUTTON	
7	4-922-531-01	(BLACK:AEP,UK)....KNOB (A TYPE), LOV	
	4-922-531-21	(GRAY:AEP,UK,E)...KNOB (A TYPE), LOV	
8	4-922-518-01	(BLACK:AEP,UK)....KNOB (TIMER)	
	4-922-518-21	(GRAY:AEP,UK,E)...KNOB (TIMER)	
9	4-922-660-01	(BLACK:AEP,UK)....BUTTON (POWER)	
	4-922-660-11	(GRAY:AEP,UK,E)...BUTTON (POWER)	

No.	Part No.	Description	Remarks
10	4-930-534-01	(BLACK:AEP,UK)....CASE	
	4-930-534-11	(GRAY:AEP,UK,E)...CASE	
11	3-704-366-21	SCREW (CASE) (M3X10)	
12	3-703-685-21	SCREW (+BV 3X8)	
13	*4-924-438-01	PLATE (M), BOTTOM	
14	4-924-410-01	FELT	
15	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
16	7-682-547-04	SCREW +BVTT 3X6 (S)	
17	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
18	7-685-648-79	SCREW +BTP 3X12 TYPE2 N-S	
19	*4-923-532-11	SPACER, LED	
910	*1-631-014-11	PC BOARD, TACT SW	
911	*1-631-015-11	PC BOARD, POWER SW	
912	*1-631-016-11	PC BOARD, HEADPHONE	
CNJ507	1-568-518-21	JACK, LARGE TYPE (HEADPHONES)	
RV501	1-238-302-11	RES, VAR, CARBON 1K/1K (HEADPHONES LEVEL)	
S901	1-552-928-00	SWITCH (POWER)	

2. DISK TABLE


52
86
80
81
83
M701
913
79
914
82
53
54
51
60
66
74
75
T901
UK Model
919
AEP Model
918
902
85
55
83
81
67
61
63
59
62
60
58
56
64
65
83
73
72
69
57
70
71
71
83
70
69
84
84
77
83
76
903
72
69
78
68
69
904
CNJ551
AEP,UK Model
917
920
84
77
74
S910
83
75
76
T901
902
84
E Model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

No.	Part No.	Description	Remarks
51	*X-4924-423-1	BRACKET (R GEAR) ASSY	
52	*3-846-067-11	SPACER	
53	4-924-477-01	SPRING, COMPRESSION	
54	*4-926-328-01	BRACKET (ADJUSTMENT A)	
55	*4-926-326-01	BRACKET (PRESS PULLEY)	
56	1-452-340-21	MAGNET	
57	4-921-022-01	PULLEY, CHUCKING	
58	4-924-421-01	SPRING (C), TENSION	
59	*4-924-424-01	BRACKET (WORM)	
60	3-669-465-00	WASHER (1.5), STOPPER	
61	4-924-419-01	PULLEY (WORM)	
62	4-917-548-02	BELT, DRIVING	
63	4-924-420-01	SHAFT (W)	
64	4-924-414-01	GEAR (WH)	
65	7-624-106-04	STOP RING 3.0, TYPE -E	
66	4-930-531-01	TABLE (C), DISK	
67	⚠.4-926-307-01	WASHER	
68	4-924-406-31	(BLACK:AEP,UK)....TABLE (A), DISK	
	4-924-406-41	(GRAY:AEP,UK,E)...TABLE (A), DISK	
69	*X-4924-409-1	SHAFT (ROLLER B) ASSY	
70	*X-4924-410-1	BRACKET (ROLLER) ASSY	
71	*X-4924-408-3	COLLAR (ROLLER) ASSY	
72	3-325-290-21	WASHER, STOPPER	
73	*X-4924-402-1	BRACKET (A) ASSY	
74	*4-923-506-01	BRACKET (PC BOARD)	
75	*4-912-962-01	COVER (1P), TERMINAL	
76	*4-924-402-51	(UK)....PANEL (M), BACK	
	*4-924-402-61	(E).....PANEL (M), BACK	
	*4-924-402-71	(AEP)...PANEL (M), BACK	

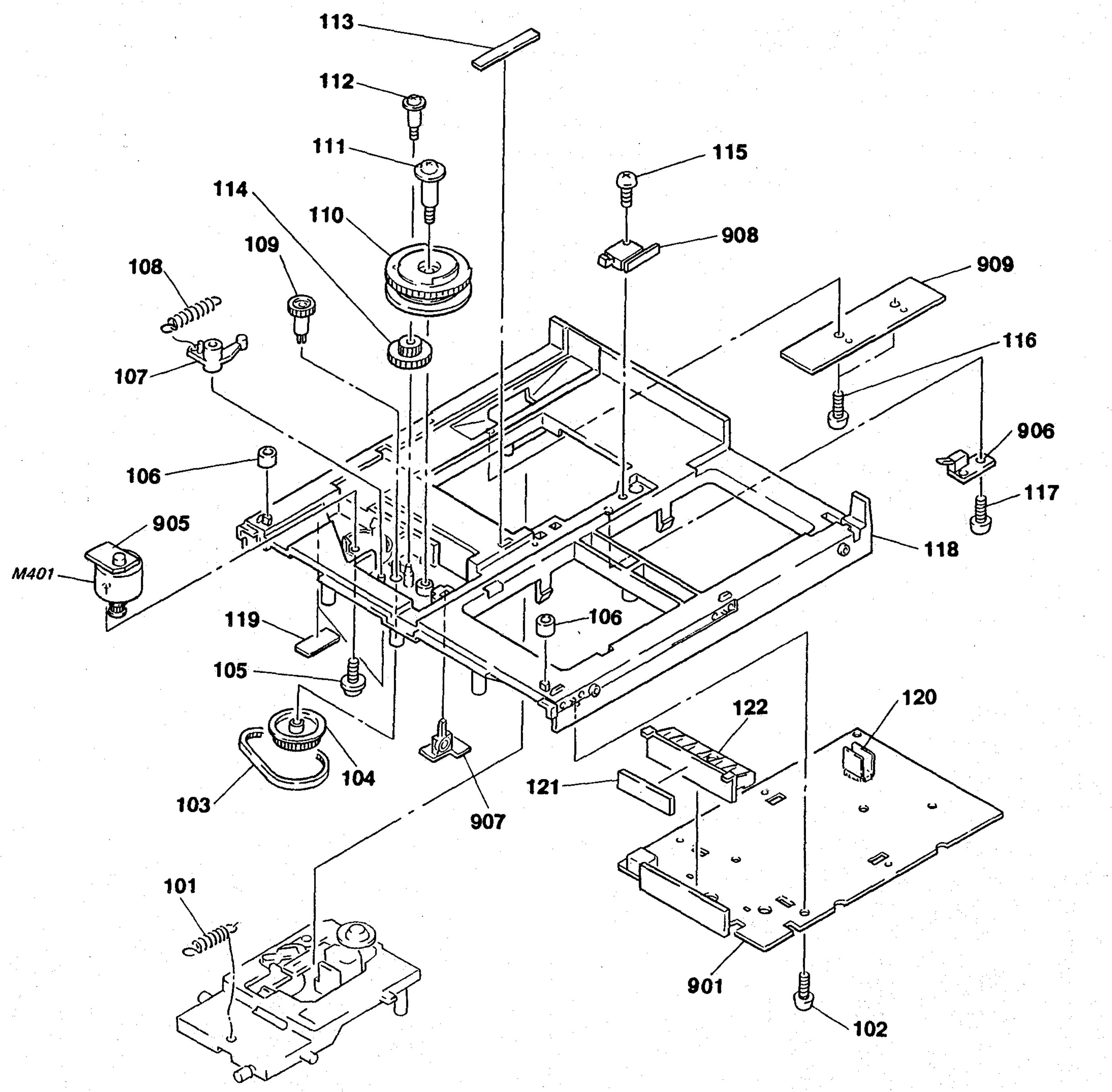
No.	Part No.	Description	Remarks
77	⚠.*3-703-244-00	(AEP,UK)...BUSHING (2104), CORD	
	⚠.3-703-571-11	(E).....BUSHING (S)(4516), CORD	
78	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
79	7-621-770-87	SCREW +BVTT 2.6X5 (S)	
80	7-621-775-08	SCREW +P 2.6X3	
81	7-685-870-01	SCREW +BVTT 3X5 (S)	
82	7-682-548-09	SCREW +B 3X8	
83	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
84	7-682-547-04	SCREW +BVTT 3X6 (S)	
85	4-921-029-01	YOKE, CHUCKING	
86	9-911-841-XX	CUSHION	
902	⚠.*1-631-004-11	(AEP,UK)...PC BOARD, P.T.	
	⚠.*1-631-005-11	(E)........PC BOARD, P.T.	
903	*1-631-007-11	PC BOARD, SENSOR	
904	*1-631-008-11	PC BOARD, PIN JACK	
913	*1-631-017-11	PC BOARD, MOTOR	
914	*1-631-018-11	PC BOARD, (R) GEAR TRANSLATION	
917	⚠.1-526-565-00	(E)...AC PLUG ADAPTOR	
918	⚠.1-555-795-00	(AEP)...CORD, POWER, EULO PLUG	
919	⚠.1-556-035-00	(UK)....CORD, POWER	
920	⚠.1-551-188-XX	(E).....CORD, POWER	
CNJ551	1-566-921-11	JACK, PIN 2P (LINE OUT L/R)	
M701	A-4608-367-A	MOTOR ASSY, ROTARY	
S910	⚠.1-571-309-11	(E)....SWITCH (VOLTAGE SELECT)	
T901	⚠.1-449-217-11	(AEP,UK)...TRANSFORMER, POWER	
T901	⚠.1-449-218-11	(E)........TRANSFORMER, POWER	

3. CH

M401

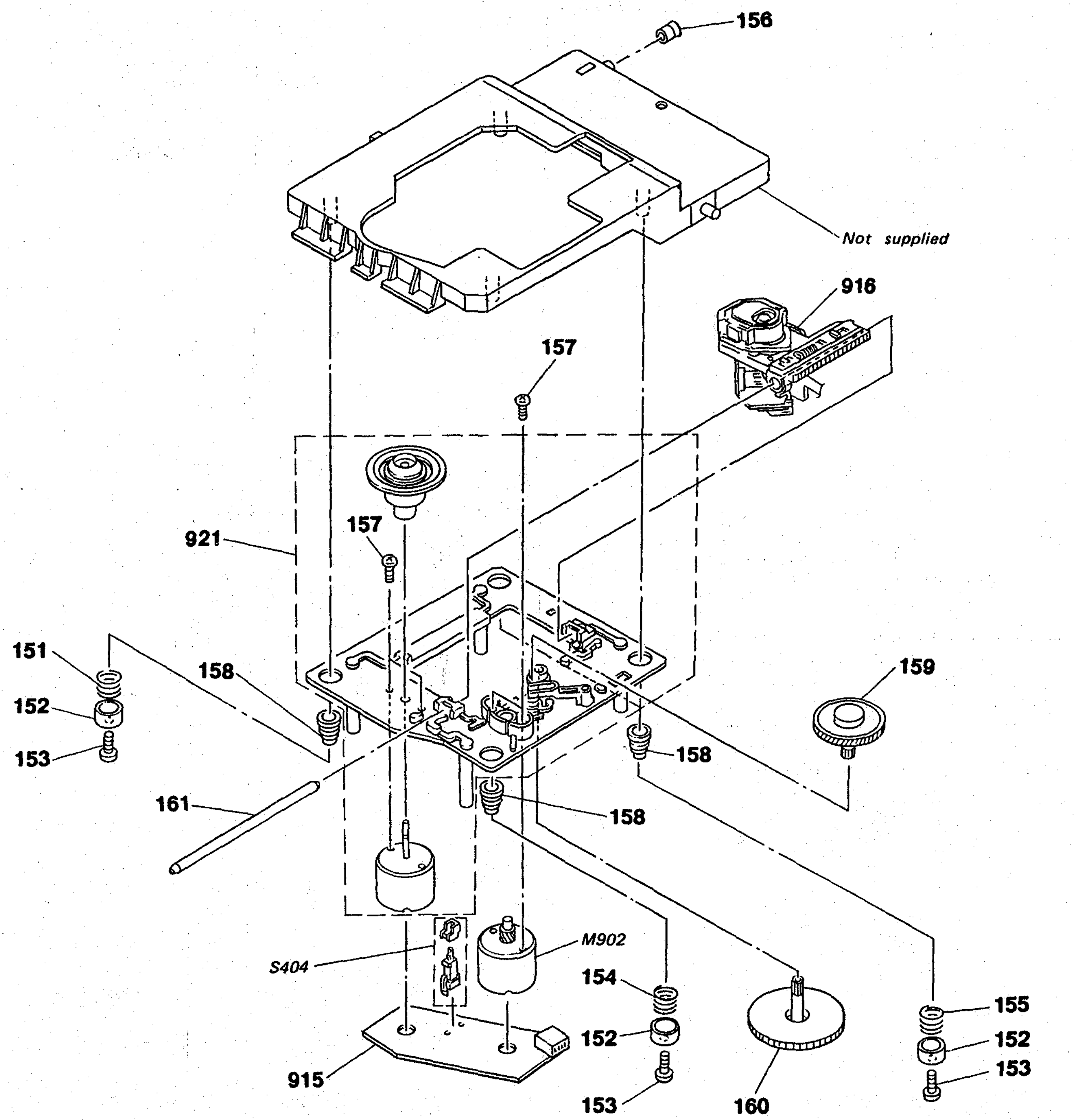
No.	Pa
101	4-
102	7-
103	4-
104	4-
105	7-
106	*3-
107	4-
108	4-
109	4-
110	4-
111	7-
112	4-
113	*4-
114	4-
115	7-
116	7-

3. CHASSIS


113
112
111
115
114
110
908
109
909
108
116
107
906
106
117
905
118
M401
106
119
105
122
120
121
104
103
907
101
901
102

No.	Part No.	Description	Remarks
101	4-924-411-01	SPRING (A), TENSION	
102	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
103	4-930-528-01	BELT (TIMING)	
104	4-930-507-01	PULLEY (LOADING)	
105	7-628-254-10	+PSW, 2.6X6	
106	*3-576-990-01	CUSHION	
107	4-917-519-01	LEVER, SET	
108	4-924-412-01	SPRING (B), TENSION	
109	4-924-425-01	GEAR (LOADING B)	
110	4-924-431-01	GEAR (LOADING A)	
111	7-685-666-79	SCREW, STEP	
112	4-926-320-01	SCREW (B), STEP	
113	*4-926-316-01	SHEET	
114	4-924-426-01	GEAR (LOADING C)	
115	7-685-137-19	SCREW +BTP 2.6X14 TYPE2 N-S	
116	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
117	7-685-134-19	SCREW +P 2.6X8 TYPE2 NON-SLIT	
118	4-924-407-06	FRAME	
119	3-831-441-XX	CUSHION (B), CABINET	
120	*4-926-349-01	HEAT SINK	
121	*4-926-354-01	SHEET (ADHESIVE)	
122	*4-926-324-01	BRACKET (FL)	
901	*A-4617-020-A	(AEP,E)...MOUNTED PCB, MAIN	
	*A-4617-106-A	(UK)......MOUNTED PCB, MAIN	
905	*1-631-009-11	PC BOARD, L.M.	
906	*1-631-010-11	PC BOARD, DOWN SW	
907	*1-631-011-11	PC BOARD, OPEN/UP SW	
908	*1-631-012-11	PC BOARD, CLOSE SW	
909	*1-631-013-11	PC BOARD, TRANSLATION	
M401	A-4608-350-A	MOTOR ASSY, LOADING	

4. BASE UNIT


156
Not supplied
916
157
157
921
159
151
158
152
158
153
158
161
M902
S404
154
155
152
152
153
915
153
160

No.	Part No.	Description	Remarks
151	4-917-541-01	SPRING (B)	
152	4-917-508-01	HOLDER, SP	
153	7-685-135-19	SCREW +P 2.6X10 TYPE2 NON-SLIT	
154	4-918-669-01	SPRING (W)	
155	4-917-507-01	SPRING (H)	
156	4-917-515-01	ROLLER	
157	7-621-255-15	SCREW +P 2X3	
158	4-917-562-01	INSULATOR	
159	4-917-567-01	GEAR (M)	
160	4-917-564-01	GEAR (P), FLATNESS	
161	4-917-565-01	SHAFT, SLED	
915	*1-627-304-11	PC BOARD, SL/SP MOTOR	
916	8-848-062-01	PICK UP, OPTICAL KSS-150A	
921	X-4917-523-1	BASE ASSY (BU-5C)(SPINDLE MOTOR)	
M902	X-4917-504-1	MOTOR ASSY (SLED)	
S404	1-571-274-11	SWITH, LEAF (LIMIT IN)	

SECTION 6

ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description			
901	*A-4617-020-A	(AEP,E)...MOUNTED PCB, MAIN			
	*A-4617-106-A	(UK)......MOUNTED PCB, MAIN			
902	⚠.*1-631-004-11	(AEP,UK)...PC BOARD, P.T.			
	⚠.*1-631-005-11	(E)........PC BOARD, P.T.			
903	*1-631-007-11	PC BOARD, SENSOR			
904	*1-631-008-11	PC BOARD, PIN JACK			
905	*1-631-009-11	PC BOARD, L.M.			
906	*1-631-010-11	PC BOARD, DOWN SW			
907	*1-631-011-11	PC BOARD, OPEN/UP SW			
908	*1-631-012-11	PC BOARD, CLOSE SW			
909	*1-631-013-11	PC BOARD, TRANSLATION			
910	*1-631-014-11	PC BOARD, TACT SW			
911	*1-631-015-11	PC BOARD, POWER SW			
912	*1-631-016-11	PC BOARD, HEADPHONE			
913	*1-631-017-11	PC BOARD, MOTOR			
914	*1-631-018-11	PC BOARD, (R) GEAR TRANSLATION			
915	*1-627-304-11	PC BOARD, SL/SP MOTOR			
916	8-848-062-01	PICK UP, OPTICAL KSS-150A			
917	⚠.1-526-565-00	(E)....AC PLUG ADAPTOR			
918	⚠.1-555-795-00	(AEP)....CORD, POWER, EULO PLUG			
919	⚠.1-556-035-00	(UK)...CORD, POWER			
920	⚠.1-551-188-XX	(E)....CORD, POWER			
921	X-4917-523-1	BASE ASSY (BU-5C)(SPINDLE MOTOR)			
C103	1-162-294-31	CERAMIC	0.001MF	10%	50V
C104	1-124-477-11	ELECT	47MF	20%	16V
C105	1-124-477-11	ELECT	47MF	20%	16V
C106	1-161-375-00	CERAMIC	0.0022MF	30%	16V
C107	1-136-159-00	FILM	0.033MF	5%	50V
C108	1-136-153-00	FILM	0.01MF	5%	50V
C109	1-136-153-00	FILM	0.01MF	5%	50V
C110	1-164-159-11	CERAMIC	0.1MF		50V
C111	1-124-477-11	ELECT	47MF	20%	16V
C112	1-124-477-11	ELECT	47MF	20%	16V
C113	1-136-171-00	FILM	0.33MF	5%	50V
C114	1-161-377-00	CERAMIC	0.0047MF	20%	16V
C115	1-161-375-00	CERAMIC	0.0022MF	30%	16V
C116	1-124-902-00	ELECT	0.47MF	20%	50V
C202	1-124-927-11	ELECT	4.7MF	20%	50V
C203	1-161-377-00	CERAMIC	0.0047MF	20%	16V
C204	1-124-477-11	ELECT	47MF	20%	16V
C205	1-161-375-00	CERAMIC	0.0022MF	30%	16V
C206	1-162-282-31	CERAMIC	100PF	10%	50V
C207	1-124-477-11	ELECT	47MF	20%	16V
C208	1-161-379-00	CERAMIC	0.01MF	20%	16V
C209	1-136-165-00	FILM	0.1MF	5%	50V
C210	1-123-875-11	ELECT	10MF	20%	50V
C211	1-136-165-00	FILM	0.1MF	5%	50V
C212	1-123-382-00	ELECT	3.3MF	20%	50V
C213	1-136-159-00	FILM	0.033MF	5%	50V
C214	1-136-165-00	FILM	0.1MF	5%	50V
C215	1-162-291-31	CERAMIC	560PF	10%	50V
C216	1-161-375-00	CERAMIC	0.0022MF	30%	16V
C217	1-124-477-11	ELECT	47MF	20%	16V
C218	1-124-477-11	ELECT	47MF	20%	16V
C219	1-124-477-11	ELECT	47MF	20%	16V
C220	1-124-499-11	ELECT	1MF	20%	50V
C221	1-164-159-11	CERAMIC	0.1MF		50V
C222	1-164-159-11	CERAMIC	0.1MF		50V
C223	1-124-499-11	ELECT	1MF	20%	50V
C301	1-124-477-11	ELECT	47MF	20%	16V
C303	1-136-159-00	FILM	0.033MF	5%	50V
C304	1-124-902-00	ELECT	0.47MF	20%	50V
C305	1-136-153-00	FILM	0.01MF	5%	50V
C306	1-161-494-00	CERAMIC	0.022MF		25V
C307	1-162-203-31	CERAMIC	15PF	5%	50V
C308	1-162-203-31	CERAMIC	15PF	5%	50V
C309	1-161-375-00	CERAMIC	0.0022MF	30%	16V
C310	1-161-375-00	CERAMIC	0.0022MF	30%	16V
C311	1-124-477-11	ELECT	47MF	20%	16V
C312	1-124-477-11	ELECT	47MF	20%	16V
C313	1-124-477-11	ELECT	47MF	20%	16V
C314	1-124-477-11	ELECT	47MF	20%	16V
C320	1-162-851-11	CERAMIC	0.1MF	20%	16V
C321	1-162-851-11	CERAMIC	0.1MF	20%	16V
C322	1-162-851-11	CERAMIC	0.1MF	20%	16V
C401	1-124-477-11	ELECT	47MF	20%	16V
C407	1-161-494-00	CERAMIC	0.022MF		25V
C408	1-162-294-31	CERAMIC	0.001MF	10%	50V
C409	1-162-294-31	CERAMIC	0.001MF	10%	50V
C410	1-161-379-00	CERAMIC	0.01MF	20%	16V
C411	1-161-379-00	CERAMIC	0.01MF	20%	16V
C412	1-161-379-00	CERAMIC	0.01MF	20%	16V
C413	1-161-379-00	CERAMIC	0.01MF	20%	16V
C420	1-162-851-11	CERAMIC	0.1MF	20%	16V
C421	1-162-851-11	CERAMIC	0.1MF	20%	16V
C430	1-162-851-11	CERAMIC	0.1MF	20%	16V
C501	1-124-927-11	ELECT	4.7MF	20%	50V
C503	1-162-286-31	CERAMIC	220PF	10%	50V
C504	1-162-291-31	CERAMIC	560PF	10%	50V
C505	1-164-159-11	CERAMIC	0.1MF		50V

Ref.No.	Part No.	Description			
C551	1-124-927-11	ELECT	4.7MF	20%	50V
C553	1-162-286-31	CERAMIC	220PF	10%	50V
C554	1-162-291-31	CERAMIC	560PF	10%	50V
C555	1-164-159-11	CERAMIC	0.1MF		50V
C560	1-124-477-11	ELECT	47MF	20%	16V
C561	1-124-477-11	ELECT	47MF	20%	16V
C570	1-136-165-00	FILM	0.1MF	5%	50V
C571	1-124-443-00	ELECT	100MF	20%	10V
C572	1-162-851-11	CERAMIC	0.1MF	20%	16V
C701	1-161-494-00	CERAMIC	0.022MF	30%	25V
C901	1-124-556-11	ELECT	2200MF	20%	16V
C902	1-124-556-11	ELECT	2200MF	20%	16V
C903	1-124-556-11	ELECT	2200MF	20%	16V
C904	1-136-165-00	FILM	0.1MF	5%	50V
C905	1-136-165-00	FILM	0.1MF	5%	50V
C906	1-136-165-00	FILM	0.1MF	5%	50V
C907	1-124-925-11	ELECT	2.2MF	20%	50V
C908	1-126-176-11	ELECT	220MF	20%	10V
C909	1-126-176-11	ELECT	220MF	20%	10V
C910	1-124-919-11	ELECT	220MF	20%	63V
C911	1-130-479-00	MYLAR	0.0047MF	5%	50V
C912	1-124-122-11	ELECT	100MF	20%	50V
C913	1-124-556-11	ELECT	2200MF	20%	16V
CNJ101*	1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P			
CNJ103*	1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P			
CNJ201*	1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P			
CNJ202*	1-564-720-11	PIN, CONNECTOR (SMALL TYPE) 4P			
CNJ401*	1-564-339-00	PIN, CONNECTOR 5P			
CNJ403*	1-506-615-11	PIN, CONNECTOR 9P			
CNJ407*	1-564-336-00	PIN, CONNECTOR 2P			
CNJ410*	1-564-336-00	PIN, CONNECTOR 2P			
CNJ411*	1-564-337-00	PIN, CONNECTOR 3P			
CNJ412*	1-564-336-71	PIN, CONNECTOR 2P			
CNJ501*	1-564-338-00	PIN, CONNECTOR 4P			
CNJ504*	1-564-500-11	PIN, CONNECTOR 7P			
CNJ507	1-568-518-21	JACK, LARGE TYPE (HEADPHONES)			
CNJ551	1-566-921-11	JACK, PIN 2P (LINE OUT L/R)			
CNJ701*	1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P			
CNJ703*	1-564-336-00	PIN, CONNECTOR 2P			
CNJ706*	1-564-337-00	PIN, CONNECTOR 3P			
CNJ902*	1-564-521-11	PLUG, CONNECTOR 6P			
CNJ911*	1-564-336-00	PIN, CONNECTOR 2P			
D101	8-719-912-20	DIODE 1SS120			
D401	8-719-121-24	DIODE RD9.1ES-L			
D402	8-719-912-20	DIODE 1SS120			
D403	8-719-912-20	DIODE 1SS120			
D404	8-719-912-20	DIODE 1SS120			
D405	8-719-920-07	DIODE GL-9PG12 (CONTINUE)			
D901	8-719-200-77	DIODE 10E2N			
D902	8-719-200-77	DIODE 10E2N			
D903	8-719-200-77	DIODE 10E2N			
D904	8-719-200-77	DIODE 10E2N			
D905	8-719-200-77	DIODE 10E2N			
D906	8-719-102-30	DIODE RD33ES-L2			
D907	8-719-934-50	DIODE HZS7B1L2			
D908	8-719-200-77	DIODE 10E2N			
D909	8-719-200-77	DIODE 10E2N			

Ref.No.	Part No.	Description			
FL401	1-519-477-11	INDICATOR TUBE, FLUORESCENT			
IB101	1-233-171-11	COMPOSITION CIRCUIT BLOCK			
IB102	1-233-171-11	COMPOSITION CIRCUIT BLOCK			
IC101	8-752-034-00	IC CXA1081S			
IC201	8-752-032-30	IC CXA1082BS			
IC202	8-759-035-28	IC CXA-1291P			
IC203	8-759-035-28	IC CXA-1291P			
IC301	8-752-328-62	IC CXD1125Q			
IC302	8-752-323-64	IC CXK5816M-12L			
IC303	8-752-328-72	IC CXD2550P			
IC304	8-759-805-35	IC CXD1161P-2			
IC401	8-759-145-82	IC UPD75208CW-287			
IC402	8-749-920-53	RECEIVER UNIT, REMOCON GP1U52A			
IC501	8-759-631-39	IC M5204P			
IC701	8-719-970-19	DIODE GP1A521			
IC901	8-759-631-40	IC M5294P			
L901	1-421-915-11	(AEP,UK)...COIL, LINE FILTER			
M401	A-4608-350-A	MOTOR ASSY, LOADING			
M701	A-4608-367-A	MOTOR ASSY, ROTARY			
M902	X-4917-504-1	MOTOR ASSY (SLED)			
Q101	8-729-116-57	TRANSISTOR 2SB1013			
Q201	8-729-115-77	TRANSISTOR BA1L4M			
Q202	8-729-900-61	TRANSISTOR DTC114ES			
Q401	8-729-900-36	TRANSISTOR DTC124ES			
Q402	8-729-900-36	TRANSISTOR DTC124ES			
Q901	8-729-900-63	TRANSISTOR DTA124ES			
Q902	8-729-900-61	TRANSISTOR DTC114ES			
Q903	8-729-154-83	TRANSISTOR 2SB548			
R101	1-249-397-11	CARBON	22	5%	1/4W
R102	1-249-405-11	CARBON	100	5%	1/4W
R103	1-249-417-11	CARBON	1K	5%	1/4W
R104	1-249-433-11	CARBON	22K	5%	1/4W
R105	1-247-864-11	CARBON	24K	5%	1/4W
R106	1-249-441-11	CARBON	100K	5%	1/4W
R107	1-249-417-11	CARBON	1K	5%	1/4W
R108	1-249-431-11	CARBON	15K	5%	1/4W
R109	1-249-431-11	CARBON	15K	5%	1/4W
R110	1-249-425-11	CARBON	4.7K	5%	1/4W
R111	1-249-425-11	CARBON	4.7K	5%	1/4W
R201	1-249-429-11	CARBON	10K	5%	1/4W
R202	1-249-433-11	CARBON	22K	5%	1/4W
R203	1-249-414-11	CARBON	560	5%	1/4W
R204	1-249-441-11	CARBON	100K	5%	1/4W
R205	1-215-434-00	METAL	3.6K	1%	1/6W
R206	1-249-441-11	CARBON	100K	5%	1/4W
R207	1-249-440-11	CARBON	82K	5%	1/4W
R208	1-247-889-00	CARBON	270K	5%	1/4W
R209	1-249-435-11	CARBON	33K	5%	1/4W
R210	1-247-896-11	CARBON	510K	5%	1/4W
R211	1-249-427-11	CARBON	6.8K	5%	1/4W
R212	1-247-881-00	CARBON	120K	5%	1/4W
R213	1-249-423-11	CARBON	3.3K	5%	1/4W
R214	1-249-425-11	CARBON	4.7K	5%	1/4W
R215	1-247-882-11	CARBON	130K	5%	1/4W
R216	1-249-432-11	CARBON	18K	5%	1/4W

Ref.No.	Part No.	Description			
R217	1-249-432-11	CARBON	18K	5%	1/4W
R218	1-249-437-11	CARBON	47K	5%	1/4W
R219	1-249-435-11	CARBON	33K	5%	1/4W
R220	1-249-417-11	CARBON	1K	5%	1/4W
R221	1-249-393-11	CARBON	10	5%	1/4W
R222	1-249-393-11	CARBON	10	5%	1/4W
R223	1-249-441-11	CARBON	100K	5%	1/4W
R301	1-215-469-00	METAL	100K	1%	1/6W
R302	1-215-469-00	METAL	100K	1%	1/6W
R303	1-249-429-11	CARBON	10K	5%	1/4W
R304	1-249-441-11	CARBON	100K	5%	1/4W
R305	1-249-429-11	CARBON	10K	5%	1/4W
R306	1-249-433-11	CARBON	22K	5%	1/4W
R307	1-247-903-00	CARBON	1M	5%	1/4W
R308	1-249-417-11	CARBON	1K	5%	1/4W
R309	1-249-417-11	CARBON	1K	5%	1/4W
R310	1-249-411-11	CARBON	330	5%	1/4W
R311	1-249-417-11	CARBON	1K	5%	1/4W
R312	1-249-417-11	CARBON	1K	5%	1/4W
R313	1-249-417-11	CARBON	1K	5%	1/4W
R401	1-249-429-11	CARBON	10K	5%	1/4W
R403	1-249-429-11	CARBON	10K	5%	1/4W
R404	1-249-439-11	CARBON	68K	5%	1/4W
R405	1-249-429-11	CARBON	10K	5%	1/4W
R406	1-249-429-11	CARBON	10K	5%	1/4W
R407	1-249-429-11	CARBON	10K	5%	1/4W
R408	1-249-433-11	CARBON	22K	5%	1/4W
R409	1-249-433-11	CARBON	22K	5%	1/4W
R410	1-249-433-11	CARBON	22K	5%	1/4W
R411	1-249-433-11	CARBON	22K	5%	1/4W
R412	1-247-885-00	CARBON	180K	5%	1/4W
R413	1-247-884-11	CARBON	160K	5%	1/4W
R414	1-247-885-00	CARBON	180K	5%	1/4W
R415	1-247-883-00	CARBON	150K	5%	1/4W
R416	1-247-881-00	CARBON	120K	5%	1/4W
R417	1-247-883-00	CARBON	150K	5%	1/4W
R418	1-247-882-11	CARBON	130K	5%	1/4W
R419	1-247-883-00	CARBON	150K	5%	1/4W
R420	1-249-429-11	CARBON	10K	5%	1/4W
R421	1-249-429-11	CARBON	10K	5%	1/4W
R422	1-249-429-11	CARBON	10K	5%	1/4W
R423	1-249-429-11	CARBON	10K	5%	1/4W
R424	1-249-429-11	CARBON	10K	5%	1/4W
R425	1-249-417-11	CARBON	1K	5%	1/4W
R430	1-249-433-11	CARBON	22K	5%	1/4W
R431	1-249-433-11	CARBON	22K	5%	1/4W
R432	1-249-407-11	CARBON	150	5%	1/4W
R501	1-249-435-11	CARBON	33K	5%	1/4W
R502	1-249-440-11	CARBON	82K	5%	1/4W
R503	1-249-439-11	CARBON	68K	5%	1/4W
R504	1-249-417-11	CARBON	1K	5%	1/4W
R505	1-249-402-11	CARBON	56	5%	1/4W
R510	1-249-429-11	CARBON	10K	5%	1/4W
R551	1-249-435-11	CARBON	33K	5%	1/4W
R552	1-249-440-11	CARBON	82K	5%	1/4W
R553	1-249-439-11	CARBON	68K	5%	1/4W
R554	1-249-417-11	CARBON	1K	5%	1/4W

Ref.No.	Part No.	Description			
R555	1-249-402-11	CARBON	56	5%	1/4W
R701	1-249-416-11	CARBON	820	5%	1/4W
R901	1-247-883-00	CARBON	150K	5%	1/4W
R902	1-249-425-11	CARBON	4.7K	5%	1/4W
RV1	1-228-995-00	RES, ADJ, CARBON 22K			
RV2	1-228-993-00	RES, ADJ, CARBON 4.7K			
RV3	1-228-995-00	RES, ADJ, CARBON 22K			
RV4	1-228-995-00	RES, ADJ, CARBON 22K			
RV5	1-228-990-00	RES, ADJ, METAL GLAZE 1K			
RV501	1-238-302-11	RES, VAR, CARBON 1K/1K (HEADPHONES LEVEL)			
S1	1-554-596-21	SWITCH, KEY BOARD (CONTINUE)			
S2	1-554-596-21	SWITCH, KEY BOARD (SUFFLE)			
S3	1-554-596-21	SWITCH, KEY BOARD (PROGRAM)			
S4	1-554-596-21	SWITCH, KEY BOARD (TIME)			
S5	1-554-596-21	SWITCH, KEY BOARD (▶▶▏)			
S6	1-554-596-21	SWITCH, KEY BOARD (▕◀◀)			
S7	1-554-596-21	SWITCH, KEY BOARD (■)			
S8	1-554-596-21	SWITCH, KEY BOARD (▶/❚❚)			
S9	1-554-596-21	SWITCH, KEY BOARD (⏏ OPEN/CLOSE)			
S10	1-554-596-21	SWITCH, KEY BOARD (DISK SKIP)			
S401	1-571-677-11	SWITCH, PUSH (1 KEY)(CLOSE)			
S402	1-571-300-11	SWITCH, ROTARY (BU-UP/OPEN)			
S403	1-571-453-11	SWITCH, LEVER SLIDE (BU-DOWN)			
S404	1-571-274-11	SWITH, LEAF (LIMIT IN)			
S901	1-552-928-00	SWITCH (POWER)			
S902	1-570-707-21	SWITCH, SLIDE (TIMER)			
S910	⚠.1-571-309-11	(E).....SWITCH (VOLTAGE SELECT)			
T901	⚠.1-449-217-11	(AEP,UK)...TRANSFORMER, POWER			
T901	⚠.1-449-218-11	(E)........TRANSFORMER, POWER			
X301	1-567-741-11	VIBRATOR, CRYSTAL 16MHz			
X401	1-567-686-11	OSCILLATOR, CERAMIC 4MHz			

ACCESSORY & PACKING MATERIAL

1-465-186-11	REMOTE COMMANDER (RM-D505)
1-559-533-11	CORD, CONNECTION
3-701-630-00	BAG, POLYETHYLENE
3-750-381-11	MANUAL, INSTRUCTION
3-750-381-41	(AEP)...MANUAL, INSTRUCTION
*3-795-629-11	(AEP)...INSTRUCTION
4-384-285-01	COVER, BATTERY
*4-885-838-00	LABEL, CLASS 1
*4-924-418-01	PLATE (TRANSPORT), LOCK
*4-930-516-01	CUSHION (LEFT)
*4-930-517-01	CUSHION (RIGHT)
*4-930-570-01	INDIVIDUAL CARTON

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description			
R217	1-249-432-11	CARBON	18K	5%	1/4W
R218	1-249-437-11	CARBON	47K	5%	1/4W
R219	1-249-435-11	CARBON	33K	5%	1/4W
R220	1-249-417-11	CARBON	1K	5%	1/4W
R221	1-249-393-11	CARBON	10	5%	1/4W
R222	1-249-393-11	CARBON	10	5%	1/4W
R223	1-249-441-11	CARBON	100K	5%	1/4W
R301	1-215-469-00	METAL	100K	1%	1/6W
R302	1-215-469-00	METAL	100K	1%	1/6W
R303	1-249-429-11	CARBON	10K	5%	1/4W
R304	1-249-441-11	CARBON	100K	5%	1/4W
R305	1-249-429-11	CARBON	10K	5%	1/4W
R306	1-249-433-11	CARBON	22K	5%	1/4W
R307	1-247-903-00	CARBON	1M	5%	1/4W
R308	1-249-417-11	CARBON	1K	5%	1/4W
R309	1-249-417-11	CARBON	1K	5%	1/4W
R310	1-249-411-11	CARBON	330	5%	1/4W
R311	1-249-417-11	CARBON	1K	5%	1/4W
R312	1-249-417-11	CARBON	1K	5%	1/4W
R313	1-249-417-11	CARBON	1K	5%	1/4W
R401	1-249-429-11	CARBON	10K	5%	1/4W
R403	1-249-429-11	CARBON	10K	5%	1/4W
R404	1-249-439-11	CARBON	68K	5%	1/4W
R405	1-249-429-11	CARBON	10K	5%	1/4W
R406	1-249-429-11	CARBON	10K	5%	1/4W
R407	1-249-429-11	CARBON	10K	5%	1/4W
R408	1-249-433-11	CARBON	22K	5%	1/4W
R409	1-249-433-11	CARBON	22K	5%	1/4W
R410	1-249-433-11	CARBON	22K	5%	1/4W
R411	1-249-433-11	CARBON	22K	5%	1/4W
R412	1-247-885-00	CARBON	180K	5%	1/4W
R413	1-247-884-11	CARBON	160K	5%	1/4W
R414	1-247-885-00	CARBON	180K	5%	1/4W
R415	1-247-883-00	CARBON	150K	5%	1/4W
R416	1-247-881-00	CARBON	120K	5%	1/4W
R417	1-247-883-00	CARBON	150K	5%	1/4W
R418	1-247-882-11	CARBON	130K	5%	1/4W
R419	1-247-883-00	CARBON	150K	5%	1/4W
R420	1-249-429-11	CARBON	10K	5%	1/4W
R421	1-249-429-11	CARBON	10K	5%	1/4W
R422	1-249-429-11	CARBON	10K	5%	1/4W
R423	1-249-429-11	CARBON	10K	5%	1/4W
R424	1-249-429-11	CARBON	10K	5%	1/4W
R425	1-249-417-11	CARBON	1K	5%	1/4W
R430	1-249-433-11	CARBON	22K	5%	1/4W
R431	1-249-433-11	CARBON	22K	5%	1/4W
R432	1-249-407-11	CARBON	150	5%	1/4W
R501	1-249-435-11	CARBON	33K	5%	1/4W
R502	1-249-440-11	CARBON	82K	5%	1/4W
R503	1-249-439-11	CARBON	68K	5%	1/4W
R504	1-249-417-11	CARBON	1K	5%	1/4W
R505	1-249-402-11	CARBON	56	5%	1/4W
R510	1-249-429-11	CARBON	10K	5%	1/4W
R551	1-249-435-11	CARBON	33K	5%	1/4W
R552	1-249-440-11	CARBON	82K	5%	1/4W
R553	1-249-439-11	CARBON	68K	5%	1/4W
R554	1-249-417-11	CARBON	1K	5%	1/4W

Ref.No.	Part No.	Description			
R555	1-249-402-11	CARBON	56	5%	1/4W
R701	1-249-416-11	CARBON	820	5%	1/4W
R901	1-247-883-00	CARBON	150K	5%	1/4W
R902	1-249-425-11	CARBON	4.7K	5%	1/4W
RV1	1-228-995-00	RES, ADJ, CARBON 22K			
RV2	1-228-993-00	RES, ADJ, CARBON 4.7K			
RV3	1-228-995-00	RES, ADJ, CARBON 22K			
RV4	1-228-995-00	RES, ADJ, CARBON 22K			
RV5	1-228-990-00	RES, ADJ, METAL GLAZE 1K			
RV501	1-238-302-11	RES, VAR, CARBON 1K/1K (HEADPHONES LEVEL)			
S1	1-554-596-21	SWITCH, KEY BOARD (CONTINUE)			
S2	1-554-596-21	SWITCH, KEY BOARD (SUFFLE)			
S3	1-554-596-21	SWITCH, KEY BOARD (PROGRAM)			
S4	1-554-596-21	SWITCH, KEY BOARD (TIME)			
S5	1-554-596-21	SWITCH, KEY BOARD (▶▶|)			
S6	1-554-596-21	SWITCH, KEY BOARD (|◀◀)			
S7	1-554-596-21	SWITCH, KEY BOARD (■)			
S8	1-554-596-21	SWITCH, KEY BOARD (▶/❚❚)			
S9	1-554-596-21	SWITCH, KEY BOARD (⏏OPEN/CLOSE)			
S10	1-554-596-21	SWITCH, KEY BOARD (DISK SKIP)			
S401	1-571-677-11	SWITCH, PUSH (1 KEY)(CLOSE)			
S402	1-571-300-11	SWITCH, ROTARY (BU-UP/OPEN)			
S403	1-571-453-11	SWITCH, LEVER SLIDE (BU-DOWN)			
S404	1-571-274-11	SWITH, LEAF (LIMIT IN)			
S901	1-552-928-00	SWITCH (POWER)			
S902	1-570-707-21	SWITCH, SLIDE (TIMER)			
S910	⚠.1-571-309-11	(E).....SWITCH (VOLTAGE SELECT)			
T901	⚠.1-449-217-11	(AEP,UK)...TRANSFORMER, POWER			
T901	⚠.1-449-218-11	(E)........TRANSFORMER, POWER			
X301	1-567-741-11	VIBRATOR, CRYSTAL 16MHz			
X401	1-567-686-11	OSCILLATOR, CERAMIC 4MHz			

ACCESSORY & PACKING MATERIAL

1-465-186-11	REMOTE COMMANDER (RM-D505)
1-559-533-11	CORD, CONNECTION
3-701-630-00	BAG, POLYETHYLENE
3-750-381-11	MANUAL, INSTRUCTION
3-750-381-41	(AEP)...MANUAL, INSTRUCTION
*3-795-629-11	(AEP)...INSTRUCTION
4-384-285-01	COVER, BATTERY
*4-885-838-00	LABEL, CLASS 1
*4-924-418-01	PLATE (TRANSPORT), LOCK
*4-930-516-01	CUSHION (LEFT)
*4-930-517-01	CUSHION (RIGHT)
*4-930-570-01	INDIVIDUAL CARTON

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TROUBLESHOOTING GUIDE

The following checks will assist in the correction of most problems which you may encounter with your unit. Should any problem persist after you have made these checks, consult your nearest Sony service facility. Before going through the check list below, first refer back to the connection and operating procedures.

Trouble	Causes	Remedy
No audio from one or both channels	Incorrect operation of the amplifier	Operate correctly.
	Loose connection	Connect the cords firmly.
Play does not begin.	No disc in the disc compartment	Put disc(s) in the compartment.
	The player is in the pause mode.	Press ▶II (or II on the remote commander) to release pause.
	Moisture condensation	Leave the player turned on for about an hour.
	The disc is set upside down.	Set the disc with the label side up.
	The disc is tilted.	Set the disc correctly.
	The disc is extremely dirty.	Clean the disc.
Discs cannot be played continuously.	Play did not start from the disc in the DISC 1 tray.	Press DISC 1 to start play.
Remote commander does not operate the unit.	The batteries are exhausted.	Replace both batteries.
	The remote commander is not pointed at the remote control sensor.	Point the remote commander to the sensor.
	There is an obstacle between the remote commander and the unit.	Remove the obstacle.
	The remote commander is too far from the unit.	Move closer.
Any operation is not possible.	The internal control program may not run.	Turn OFF the power and turn it ON again.

9-953-740-11

Sony Corporation
Audio Group

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